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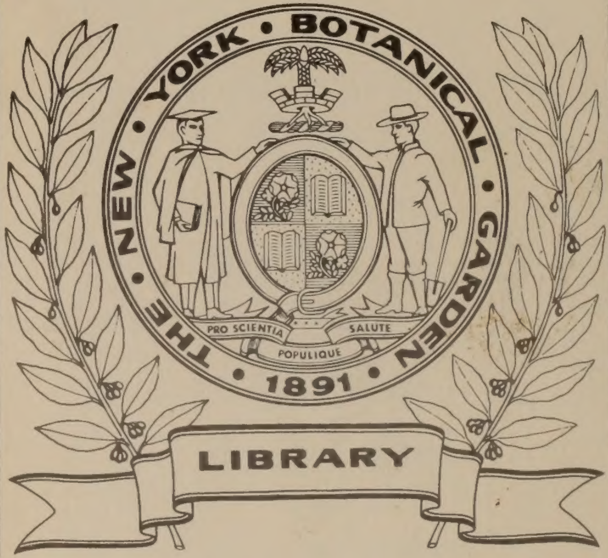

THE NEW YORK BOTANICAL GARDEN
1891
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BRITISH
PHÆNOGAMOUS BOTANY;

OR,

FIGURES AND DESCRIPTIONS OF THE GENERA

OF

BRITISH FLOWERING PLANTS.

BY W. BAXTER, F. H. S.

ASSOCIATE OF THE LINNEAN, AND ROYAL MEDICO-BOTANICAL SOCIETIES;
CORRESPONDING MEMBER, AND LOCAL SECRETARY FOR OXFORD,
OF THE BOTANICAL SOCIETY OF LONDON;
CURATOR OF THE BOTANIC GARDEN, OXFORD;
AND AUTHOR OF STIRPES CRYPTOGAMÆ OXONIENSES.

> Fairest of all that's fair
> In nature's works are ye, ye wilding flowers.
>
> Moral of Flowers.

VOL. VI.

OXFORD.
PUBLISHED BY THE AUTHOR;
SOLD BY J. H. PARKER;
AND BY WHITTAKER AND CO. LONDON.
1843.

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TO
CHARLES EMPSON, ESQUIRE,
OF BATH,
AUTHOR OF NARRATIVES OF SOUTH AMERICA;
ANTIQUARIAN MISCELLANY;
SCENERY ON THE ANDES;
&c. &c.
This Volume
OF
BRITISH PHÆNOGAMOUS BOTANY,
IS MOST RESPECTFULLY DEDICATED,
IN ACKNOWLEDGEMENT
OF
THE MANY MARKS OF KINDNESS AND FRIENDSHIP
RECEIVED FROM HIM;
AND
AS A SMALL, BUT SINCERE, TRIBUTE
OF REGARD AND ESTEEM,
BY HIS OBLIGED,
AND HUMBLE SERVANT,

WILLIAM BAXTER.

Botanic Garden, Oxford,
May 15, 1843.

209919

Beautiful children of the woods and fields!
That bloom by mountain streamlets 'mid the heather,
Or into clusters, 'neath the hazels, gather—
Or where by hoary rocks you make your bields,
And sweetly flourish on through summer weather—
I love ye all!

Beautiful flowers! to me ye fresher seem
From the Almighty hand that fashion'd all,
Than those that flourish by a garden wall;
And I can image ye as in a dream,
Fair modest maidens, nursed in hamlets small—
I love ye all!

Beautiful gems! that on the brow of earth
Are fixed, as in a queenly diadem;
Though lowly ye, and meek without a name,
Young hearts rejoice to see your buds come forth,
As light e'erwhile into the world (ye) came—
I love ye all!

Beautiful things ye are, where'er ye grow!
The wild red rose—the speedwell's peeping eyes—
Our own blue bell—the daisy, that doth rise
Wherever sunbeams fall, or winds do blow;
And thousands more, of blessed forms and dyes—
I love ye all

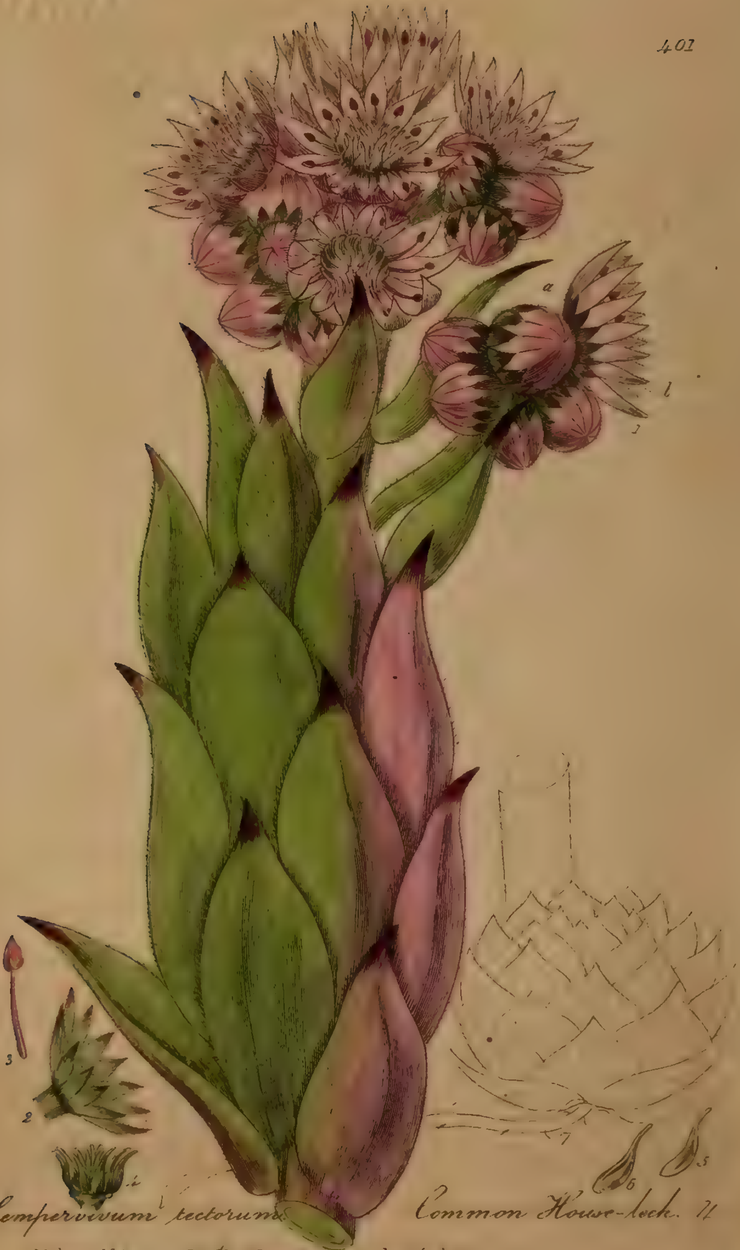
Beautiful nurslings of the early dew!
Fann'd in your loveliness by every breeze,
And shaded o'er by green and arching trees:
I often wish that I were one of you,
Dwelling afar upon the grassy leas—
I love ye all!

Beautiful watchers! day and night ye wake!
The Evening Star grows dim and fades away,
And morning comes and goes, and then the Day
Within the arms of Night its rest doth take;
But ye are watchful wheresoe'er we stray—
I love ye all!

Beautiful objects of the wild bee's love!
The wild bird joys your opening bloom to see,
And in your native woods and wilds to be.
All hearts, to Nature true, ye strangely move;
Ye are so passing fair—so passing free—
I love ye all!

Beautiful children of the glen and dell—
The dingle deep—the muirland stretching wide,
And of the mossy fountain's sedgy side!
Ye o'er my heart have thrown a lovesome spell;
And though the worldling scorning may deride—
I love ye all!

Renshaw's Pocket Keepsake for 1841.



Sempervivum tectorum. Common House-leek. ♃

Mathews Del & Sc

Pub^d by W Baxter, Botanic Garden Oxford 1840

SEMPERVI'VUM*.

Linnean Class and Order. DODECA'NDRIA†, DODECAGY'NIA.

Natural Order. CRASSULA'CEÆ‡, *Decand.*—Lindl. Syn. p. 63.; Introd. to Nat. Syst. of Bot. p. 161.—Rich. by Macgilliv. p. 514.—Loud. Hort. Brit. p. 516 —Don's Gen. Syst. of Gard. and Bot. v. iii. p. 97.—Mack. Fl. Hibern. p. 59.—CRA'SSULÆ, Juss. Dict. des. Sc. Nat. v. xi. p. 369.—SUCCULE'NTÆ, *Linn.*—Vent. Tabl. v. iii. p. 271.—SEMPERVIVÆ, Juss. Gen. Pl. p. 307.—Sm. Gram. of Bot. p. 162.—ROSALES; sect. CRASSULINÆ; type, CRASSULACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 730, & 735.

GEN. CHAR. *Calyx* (fig. 1, *a.* and fig. 2.) inferior, of 1 sepal, concave, permanent, in from 6 to 12, more or less deep, uniform, fleshy, rather sharp-pointed, segments. *Corolla* (see fig. 1, *b.*) of the same number of petals as the segments of the calyx, and somewhat larger, spear-shaped, pointed, channelled, equal, spreading, withering. *Nectary* an occasional, very minute, entire scale, at the base of each germen, on the outer side. *Filaments* as many, or twice as many, as the petals, opposite to them, but not so long; when more numerous, partly alternate, awl-shaped, spreading. *Anthers* of 2 round lobes. *Germens* (see fig. 4.) as many as the petals, ranged in a radiating circle, oblong, pointed, compressed, each terminating in a spreading *style*, with a blunt *stigma*. *Capsules* (see figs. 5 & 6.) as many as the germens, and of the same figure, bursting along their upper or inner margin. *Seeds* numerous, minute, arranged along the inner margin, at each side.

The 6- to 12-cleft *calyx;* the *corolla* of from 6 to 12 petals; and the 6 to 12 *capsules;* will distinguish this from other genera in the same class and order.

One species British.

SEMPERVI'VUM TECTO'RUM. Roof Houseleek. Common Houseleek. Great Houseleek. Aygreen. Jupiter's Eye. Bullock's Eye. Jupiter's Beard. Great Sengreen.

SPEC. CHAR. Leaves ciliated. Offsets spreading. Petals entire and hairy at the margins.

Engl. Bot. t. 1320.—Curt. Fl. Lond. t. 160.—Fl. Dan. t. 601.—Linn. Sp. Pl. p. 664.—Huds. Fl. Angl. (2nd edit.) p. 211.—Willd. Sp. Pl. v. ii. pt. II. p. 932.—Sm. Fl. Brit. v. ii. p. 522.; Engl. Fl. v. ii. p. 350.—With. (7th ed.) v. ii. p. 590*.—Gray's Nat. Arr. v. ii. p. 543.—Lindl. Syn. p. 65.—Hook. Brit. Fl. p. 219.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 124.—Macr. Man. Brit. Bot. p. 89.—Lightf. Fl. Scot. v. i. p. 251.—Sibth. Fl. Oxon. p. 153.—Abbot's Fl. Bedf. p. 106.—Thom. Pl. of Berw. p. 50.—Davies' Welsh Bot. p. 47.—Purt. Midl. Fl. v. i. p. 231.—Relh. Fl. Cant. (3rd ed.) p. 192.—Hook. Fl. Scot. p. 149.—Grev. Fl. Edin. p. 107.—Fl. Devon. pp. 81 & 185.—Johnst. Fl. of Berw. v. i. p. 106.—Winch's Fl. of Northumb. and Durh. p. 31.—Walker's Fl. of Oxf. p. 133.—Lindl. Fl. Med. p. 275.—Bab. Fl. Bath. p. 18.; Prim. Fl. Sarn. p. 41.—Dick. Fl. Abred. p. 39.—Irv. Lond. Fl. p.

Fig. 1. A Flower; *a*, calyx; *b*, corolla.—Fig. 2. Calyx.—Fig. 3. A perfect Stamen.—Fig. 4. Fruit.—Figs. 5 & 6. Two of the Capsules.—Fig. 7. A tuft of Leaves.

*** From *semper, always;* and *vivo, to live;* from its continual verdure and tenacity of life. LEIGHTON.**

† See folio 15, note †. **‡ See folio 364, *a*.**

170.—Luxf. Reig. Fl. p. 42.—Leighton's Flora of Shropshire, p. 205.—Mack. Cat. of Pl. of Irel. p. 47.; Fl. Hibern. p. 62.—*Sempervivum majus*, Ray's Syn. p. 269.—Johns. Ger. p. 510.—*Sedum tectorum*, Scop. Fl. Carn. (2nd ed.) p. 325.

Localities.—On walls, and cottage roofs, frequent, but perhaps not properly indigenous.

Perennial.—Flowers from June to September.

Root branched, fibrous. *Leaves* numerous, in tufts somewhat resembling a full-blown double rose, oblong, pointed, keeled, very succulent, the margins fringed with hairs, and generally tinged with red; the outer ones largest, the inner ones gradually smaller. *Offsets* on long cylindrical, slightly downy footstalks or runners (sarmenta), globular, composed of upright leaves lying over each other. *Flowering Stem* from the centre of one of the rosaseous tufts of leaves, from 9 to 12 inches high, upright, cylindrical, downy, clothed with many, alternate, sessile leaves, which are narrower and less succulent than the rest. *Flowers* large and handsome, of a pale rose-colour, in a terminal, many-flowered *cyme*, with spiked branches. Segments of the *Calyx* 12 or more, with a similar number of petals and stamens. Sir W. J. Hooker says, that "the number of *stamens* is in reality 24, of which 12, inserted one at the base of each *petal*, are perfect; the rest alternating with the *petals*, small and abortive; *some* bearing *anthers*, open longitudinally and laterally, producing, instead of pollen, *abortive ovules!* others resemble a cuneate pointed scale, in the inside of which, upon a longitudinal receptacle, are likewise ranged abortive *ovules*, in the same manner as in the real germen; thus exhibiting the most complete transition from stamens to germens, in the same individual flower."

This plant is a native of Europe on rocks, and on the roofs of houses, but is considered to be not truly wild in England, though inserted in all the Floras.

The juice of its leaves, either applied by itself, or mixed with cream, which is the best way of applying it, gives present relief in burns, and other external inflammations; it is also said to cure corns. Mixed with honey it is a useful application in the thrush. The Dispensatory describes a beautiful white highly volatile coagulum, formed of the filtrated juice of the leaves, with an equal quantity of rectified spirit of wine.

"*Sempervivum tectorum* is one of those species which are capable of growing in the most dry and exposed situations, often attracting its food from the atmosphere much more than from the scanty source that its roots have access to. It is usually planted by being enclosed in a lump of moist clay, which is stuck upon the naked tiles of a cottage. In such a situation, the young plant first secures itself by putting forth a few roots into the clay, and then gives birth to a number of little starry clusters of leaves, which surround their parent, and overshadow the place where the roots are to continue to develope; in the first instance, protecting it from the glare of the sun, and afterwards forming, by their decay, a soft vegetable mould, into which other roots may penetrate. They are enabled to effect this by the power which they, in common with all other plants, but in a higher degree, possess of abstracting from the atmosphere its impure air, or carbonic acid, which they convert from a gaseous into a solid state, by separating the charcoal or solidifiable portion, and liberating the vital air or oxygan that was combined with it. By this wonderous process, living plants become the great purifiers of the air we breathe, and it appears quite certain, that if it were not for them the earth would soon become so pestiferous as to be uninhabitable." Lindley's *Ladies' Botany*[*], v. ii. p. 106.

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[*] One of the most pleasing and instructive of Botanical books.

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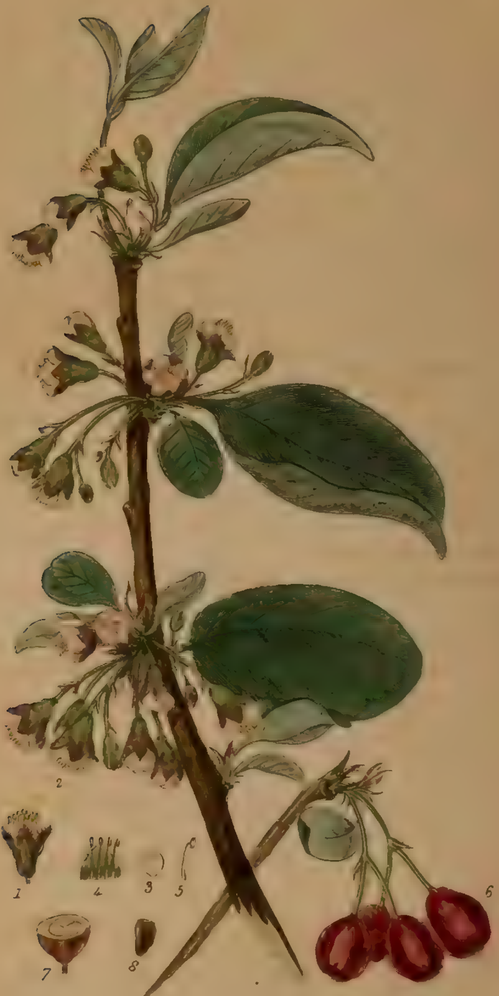

Cotoneaster vulgaris. Common Cotoneaster. ♄

Russell Del. Pub^d by W. Baxter, Botanic Garden Oxford. 1840. Mathews Sc.

COTONEA'STER *.

Linnean Class and Order. ICOSA'NDRIA †, DI-TRIGY'NIA.

Natural Order. POMA'CEÆ, *Linn.*—Lindl. in Tr. of Linn. Soc. v. xiii. p. 93.; Syn. p. 103.; Introd. to Nat. Syst. of Bot. p. 83.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 597.—ROSA'CEÆ; tribe, POMA'CEÆ, Juss. Gen. Pl. p. 333.—Sm. Gram. of Bot. pp. 171 and 172.—Rich. by Macgilliv. pp. 528 & 530.—Loud. Hort. Brit. pp. 512 & 513.—Hook. Brit. Fl. (4th edit.) p. 405.—ROSALES; subtype, PYRIDÆ, Burn. Outl. of Bot. v. ii. pp. 614 & 695.

GEN. CHAR. *Flowers* polygamous, (i. e. some perfect and some barren on the same tree).—*Calyx* (fig. 1.) turbinate, with 5 short, egg-shaped teeth. *Corolla* (see fig. 2.) of 5, small, upright, nearly orbicular, concave petals (see fig. 3.), attached to the rim of the calyx. *Filaments* (see figs. 1 & 4.) 16 or more, upright, the length of the teeth of the calyx. *Anthers* roundish, 2-lobed. *Germen* (see fig. 1.) roundish. *Styles* 2 or 3, sometimes 4, smooth, shorter than the stamens. *Fruit* (see figs. 6 & 7.) turbinate, or pear-shaped, with its *nuts* (see figs 7 & 8.) adhering to the inside of the calyx, but not cohering in the centre.

The polygamous *flowers;* the turbinate, 5-toothed *calyx;* the *corolla* of 5, small, upright petals; and the turbinate *fruit*, with its nuts adhering to the inside of the calyx, but not cohering in the centre; will distinguish this from other genera in the same class and order.

One species British.

COTONEA'STER VULGA'RIS. Common Cotoneaster. Dwarf Quince-leaved Medlar.

SPEC. CHAR. Leaves oval, entire, rounded at the base, downy beneath, deciduous. Calyx smooth. Peduncles slightly downy.

Engl. Bot. Suppl. t. 2713.—Hook. Fl. Lond. t. 211.—Lindl. in Tr. of Linn. Soc. v. xiii. p. 101.; Syn. p. 104.—Hook. Brit. Fl. p. 221.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 603.—Loud. Arb. et Frutic. Brit. p. 870. fig. 620.; Hort. Lig. Loud. p. 49.; Mag. Nat. Hist. v. vi. p. 55.—Macr. Man. Brit. Bot. p. 74.—Irv. Lond. Fl. p. 251.—*Cotoneáster folio rotundo non serrato*, Bauh. Pin. p. 452.—*Cotoneaster*, Bauh. Hist. v. i. lib. I. p. 73, with a figure.—*Méspilus Cotoneáster*, Linn. Sp. Pl. p. 686.; Fl. Suec. (2nd ed.) p. 169.—Fl. Dan. t. 112.—Willd. Sp. Pl. v. ii. pt. II. p. 1012.—Ait. Hort. Kew. (2nd ed.) v. iii. p. 206.—Sm. Engl. Fl. v. iv. p. 268.—With. (7th ed.) v. iii. p. 600.—*Mespilus folio subrotundo, fructu rubro*, Engl. Gard. Catal. p. 49. t. 14.—*Chamæmespilus*, Johnson's Gerarde, p. 1454, with a figure.

LOCALITIES.—On limestone rocks in Wales.—*Caernarvonshire;* On the limestone cliffs of the Great Ormshead, in various places; 1825: Mr. W. WILSON. Above the village of Llandudno, on the rocks which overhang some copper mines, abundantly; June 12, 1832: Mr. W. CHRISTY, in *Mag. of Nat. Hist.* v. vi. p. 55.

Fig. 1. Calyx.—Fig. 2. A Flower, showing Calyx, Corolla, and Stamens.—Fig. 3. A Petal.—Fig. 4. A segment of the Calyx, with 4 of the Stamens.—Fig. 5. A separate Stamen.—Fig. 6. A Fruit.—Fig. 7. A transverse section of do.—Fig. 8. A Nut.

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* A sort of barbarous word, signifying quince-like. The quince was called *cotonea* by PLINY; and *aster* a corruption of *ad instar*, is used occasionally to express similitude. LOUDON.

† See folio 100, note †.

A Shrub.—Flowers in April and May.

A small *bush*, with spreading or partly recumbent, round, leafy, brown, smooth *branches;* downy, and somewhat angular when young. *Thorns* none. *Leaves* alternate, deciduous, egg-shaped, or broadly elliptical, blunt or pointed, entire, about an inch long, and three-quarters of an inch broad; green, smooth, and even above; white, cottony and veiny beneath. *Petioles (leafstalks)* short, downy, channelled above; each with a pair of spear-shaped, pointed, chesnut-coloured, fringed, deciduous *stipulas* at its base. *Peduncles (flowerstalks)* downy, from the same buds as the leaves, and always shorter than them; in wild specimens usually solitary and single-flowered; in cultivated ones often branched, with 3 or 4 flowers. *Bracteos* very small, red, spear-shaped, and pointed. *Flowers* (see fig. 2.) drooping, pale red. *Calyx* (*germen* of some authors) smooth, 5-cleft, its segments egg-shaped, blunt, incurved and woolly at the margin. *Petals* (see fig. 3.) small, but little larger than the segments of the calyx, nearly orbicular, white with a tinge of pink. *Filaments* (see figs. 4 & 5.) from 16 to 20, flat, and somewhat awl-shaped. *Styles* 3, sometimes 4, thread-shaped. *Fruit* (see figs. 6 & 7.) pear-shaped, crowned with the closed segments of the calyx. *Nuts* (see figs. 7 & 8.) of the same number as the styles, bony, entire, each bearing one style from the lower part of its inner angle.

It is a native of sunny parts of subalpine hills of Europe and of Siberia, but it was not known to be indigenous to Britain, till Mr. Wilson found it in a wild state at Ormshead, in 1825. A specimen of it is said to have been gathered wild, by J. W. Griffith, Esq. of Garn, as long ago as 1783, but it appears it was laid by and forgotten. In a wild state it forms a shrub from 2 to 3 feet high; but when cultivated it will attain the height of 4 or 5 feet. Mr. Loudon says, that if it is grafted standard high on the hawthorn or the mountain ash, it will form a very curious, round-headed, pendent-branched tree, as may be seen in the garden of the Horticultural Society of London, and in the Hammersmith Nursery. The *fruit*, which ripens in July and August, is said to be first green, then orange, then red, and finally black. Its pulp is mealy, insipid, or slightly austere.

Linnæus recommends this shrub for making low hedges, in dry broken ground, as the roots run very deep into the earth; but, according to Mr. Christy's observations, it is liable to be browsed on by sheep.

Three varieties of it are cultivated, viz. α. *erythrocarpa;* β. *melanocarpa;* and γ. *depressa;* the latter is rather spiny; in α the fruit is red, and β black, when ripe.

The *Natural Order* Pomaceæ is composed of polypetalous, dicotyledonous *trees* or *shrubs*, with alternate, stipulate, simple, or compound leaves, and cymose, white or pink flowers The *calyx* is bell-shaped, or pitcher-shaped, fleshy, surrounding the carpels, and adherent to them; *limb* 5-lobed, the odd segment posterior. The *corolla* consists of 5 unquiculate petals, inserted in the throat of the calyx, the odd one anterior. The *stamens* are indefinite, and are inserted in a ring in the throat of the calyx. The *ovaries* vary in number from 1 to 5, and adhere more or less to the sides of the calyx, and to each other. The *ovules* are usually 2, collateral, ascending, very rarely solitary. The *styles* are equal in number to the ovaries, each having a simple *stigma*. The *fruit* is a pome, consisting of the berry-like calyx and carpels. The *carpels* are cartilaginous, spongy, or bony, of 2 valves, or indehiscent. The *seeds* are generally 1 or 2 in each carpel or cell (numerous in *Cydonia*, the Quince), upright, with a catilaginous (grisly), or bony testa (spermoderm), without albumen. The *cotyledons* are oval and fleshy; and the *embryo* upright, with a short, conical radicle.—The British genera contained in this order are, *Mespilus.—Cratægus*, t. 118.—*Pyrus*, t. 111.—and *Cotoneaster*, t. 402.

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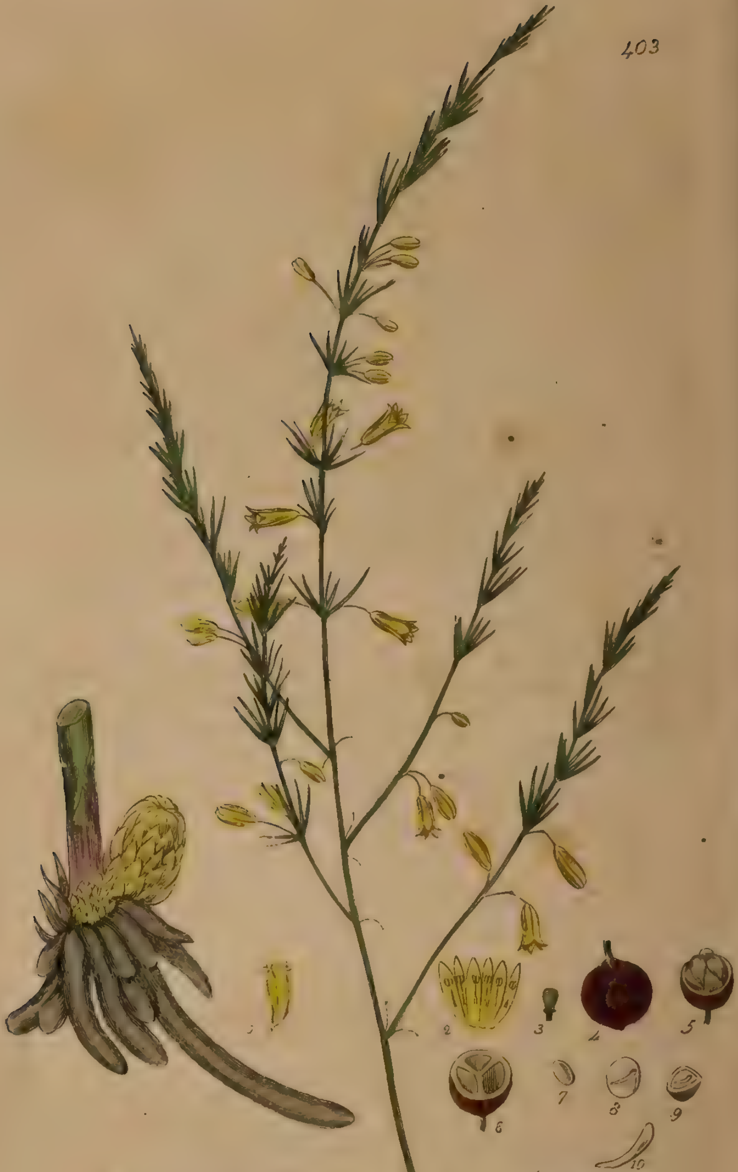
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Asparagus officinalis. Common Asparagus. ♃

Mathews Del. & Sc. Pub.d [illegible] Botanic Garden [illegible]

ASPA'RAGUS*.

Linnean Class and Order. HEXA'NDRIA †, MONOGY'NIA.

Natural Order. ASPHODE'LEÆ ‡, *Dr. R. Brown.*—Lind. Syn. p. 266.; Introd. to Nat. Syst. of Bot. p. 273.—Loud. Hort. Brit. p. 539.—Mack. Fl. Hib. p. 284.—Hook. Brit. Fl. (4th ed.) p. 423.—ASPARAGI, sect. I. Juss. Gen. Pl. p. 40.—Sm. Gram. of Bot. p. 71.—ASPARAGINEÆ, sect. I. Rich. by Macgilliv. p. 402.—ASPARAGEÆ, Macr. Man. Brit. Bot. p. 233.—LILIALES; sect. LILIACINÆ; type, ASPHODELACEÆ; Burn. Outl. of Bot. v. i. pp. 418, 425, & 427.—SARMENTACEÆ, *Linn.*

GEN. CHAR. *Calyx* none. *Corolla (perianthium*§*)* (see figs. 1 & 2.) inferior, of 6 deep, equal, oblong, spreading, deciduous petals, combined at the base. *Filaments* (see fig. 2.) 6, awl-shaped, smooth, inserted at the base of the petals, and much shorter than them. *Anthers* peltate, upright. *Germen* (fig. 3.) globular. *Style* short, with 3 furrows. *Stigma* in 3 spreading lobes, deciduous. *Berry* (see figs. 4, 5, & 6.) globular, of 1, 2, or 3 cells, and few seeds. *Seeds* (fig. 7.) externally globose, with a horny *albumen*, and a transverse *embryo*, far out of the centre.

The inferior, deeply 6-parted *corolla;* the globose, 1- to 3-celled, few-seeded *berry;* and the short *style*, with a 3-lobed *stigma;* will distinguish this from other genera, without a calyx, in the same class and order.

One species British.

ASPA'RAGUS OFFICINA'LIS. Common Asparagus. Sperage.

SPEC. CHAR. Stem herbaceous, round, upright, without prickles. Leaves bristle-shaped, fasciculate, flexible. Peduncles jointed in the middle.

Engl. Bot. t. 339.—Fl. Dan. t. 805.—Linn. Sp. Pl. p. 448 —Huds. Fl. Angl. (2nd edit.) p. 145.—Willd. Sp. Pl. v. ii. pt. I. p. 150.—Sm. Fl. Brit. v. i. p. 369.; Engl. Fl. v. ii. p. 152.—With. (7th edit.) v. ii. p. 432.—Gray's Nat. Arr. v. ii. p. 185.—Lindl. Syn. p. 267.—Hook. Br. Fl. p. 158.—Macr. Man. Brit. Bot. p. 233.—Davies' Welsh Bot. p. 33.—Hook. Fl. Scot. p. 103.—Grev. Fl. Edin. p. 77.—Fl. Devon. pp. 59 & 129.—Bryant's Fl. Diæt. p. 52.—Phil. Cult. Veg. (new edit.) p. 27.—Walker's Fl. of Oxf. p. 95.—Loud. Encyl. of Gard. (1835) p. 847. paragr. 4260 —Bab. Prim. Fl. Sarn. p. 94.—Irv. Lond. Fl. p. 107.—*Asparagus*, Ray's Syn. p. 267.—*Asparagus sativus*, Johnson's Gerarde. p. 1110.—Mill. Icon. p. 37. t. 55. f. 1.

LOCALITIES.—On the sea-coast, in sandy or stony places.—*Cornwall;* Mullion Island, near the Lizard Point, and hence the largest pyramidal mass of Serpentine rock, in Kynance Cove, is called Asparagus Island: Dr. WITHERING.—*Devon;* Banks of the Exe, between Topsham and Lympstone: Miss FILMORE,

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Fig. 1. A Flower.—Fig. 2. A Flower opened longitudinally, showing the six stamens.—Fig. 3. Germen.—Fig. 4. A Berry.—Fig. 5. A transverse section of ditto, showing the Seeds.—Fig 6. The same with the seeds removed.—Fig. 7. A Seed.—Fig. 8. A Seed with the testa removed, showing the situation of the embryo.—Fig. 9. A transverse section of the albumen, with the embryo.—Fig. 10. Embryo separate.

* From *Asparagos*, Gr.; a term originally applied to all tender shoots of plants. WITHERING.

† See folio 33, note †. ‡ See folio 41, *a*. § See folio 33, note ‡.

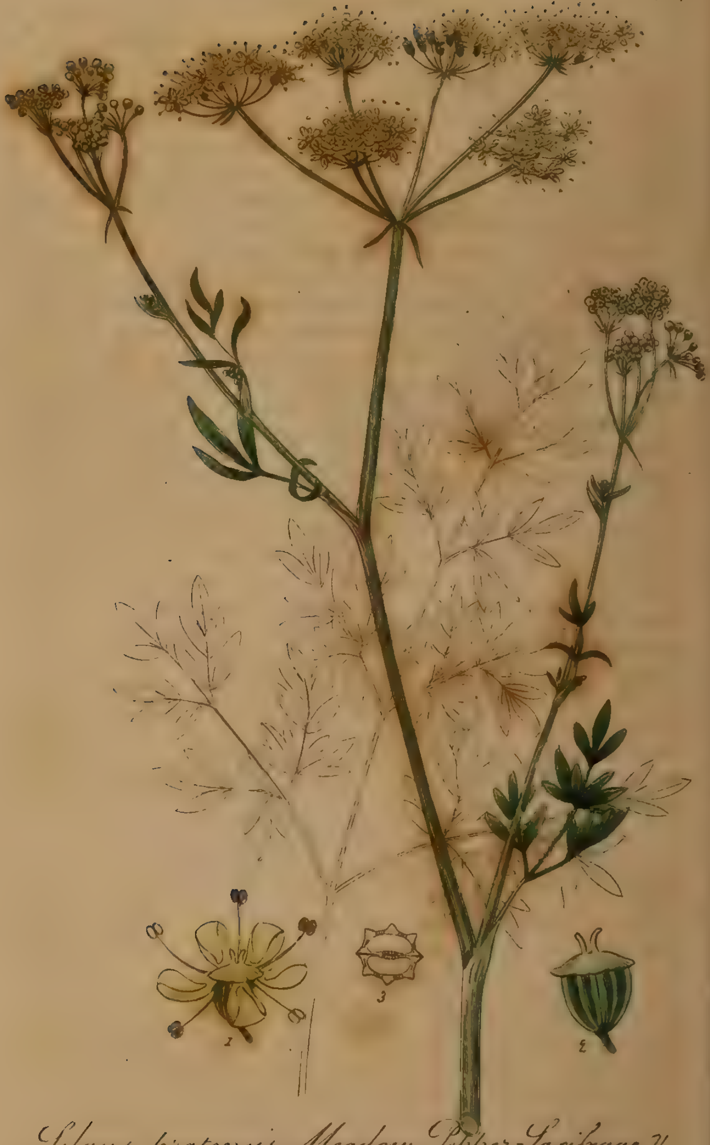
in *Fl. Devon.*—*Dorset;* Very common on the Chesil Bank; on the shores and marshes at Poole Harbour; and especially about the North Haven Sandbanks: Dr. Pulteney. Near the Ferry, and extremity of Portland Island: D. Turner, Esq. in B. G. Near Weymouth: Mr. Lambert.—*Essex;* About Harwich: Ray.—*Gloucestersh.* In the Marshes below Bristol: Merrett, in Pin. p. 11. In the salt marshes below King's Weston, near Britol: Dr. Stokes. Marshes near Thombury: Mr. Dyer. Sea Mills: Miss Worsley, in N. B. G.—*Hants;* At Christ Church; and Freshwater, Isle of Wight: Dr. Pulteney.—*Kent;* By the Thames near Gravesend: Mr. J. Sherard, in *Ray's Syn.*—*Lincolnsh.* In the rich Meadows near Holbeach, Long Sutton, &c.: Sir J. Banks, in B. G. Cliff near Hemswell, Spittal: *Lond. Fl.*—*Norfolk;* Burgh, near Beccles: Mr. Woodward, in B. G. Sea-shore, opposite the Monument: Mr. Woodward, in N. B. G.—*Somersetsh.* In marshes below Look's Folly, two miles from Bristol: Mr. Newton, in *Ray's Syn.* Sand banks at Steart and Burnham, from 3 to 5 feet high, when in blossom: N. B. G.—*Surrey;* Near the Mill, Waddon; probably not wild: *Lond. Fl.*—WALES. *Anglesea;* On a sandy hillock below Llanfælog: Rev. H. Davies.—*Glamorgansh.* Meadows between Cowbridge and the sea; and about Cardiff: Dr. Turton.—SCOTLAND. *Haddingtonsh.* Links near Gosford: Mr. E. Maughan, in *Fl. Edin.*

Perennial.—Flowers in July.

Root somewhat creeping, with long, stout, fleshy fibres; the crown densely scaly. *Stems* annual, upright, round, smooth, stiff, naked and scaly below; much branched, and leafy above; from a foot to 18 inches high in a wild state, in a cultivated one much higher. *Leaves* tufted, small, bright green, bristle-shaped, pointed, smooth. *Stipulas* solitary, membranous, spear-shaped, sometimes with 2 smaller ones within, the uppermost short and torn. *Flowers* axillary, 2 or 3 together, bell-shaped, drooping, yellowish-green; each on a slender, jointed, drooping peduncle. *Style* very short. *Berries* globular, bright scarlet, about the size of currants, not eatable. *Seeds* black. *Plants* sometimes diœcious, or even polygamous. A variety, in which the foliage is procumbent, is described by Dillenius in *Ray's Synopsis*, as growing on the sandy banks by the sea-side between Langwyfan and Llanfaelog; and also below Look's Folly, two miles from Bristol. It has been observed since, in the former station, by the Rev. H. Davies.

Asparagus is a native of most other parts of Europe as well as of England, and also of Japan. In that excellent and most useful work of Mr. Loudon's, the *Encyclopœdia of Gardening*, we are informed, that "many of the steppes in the south of Russia and Poland are covered with this plant, which is there eaten by the horses and oxen as grass." It is much cultivated, especially about London, for the sake of the young sprouting stems, which are universally esteemed for their flavour and nutritious qualities. It is principally served to table on a toast, or ragou'd. It also makes an excellent soup, and is often cut small and sent to table as a substitute for green peas.

A very pretty little insect of the Beetle kind, *Chrysomela Asparagi*, feeds upon the plant.



Silaus pratensis. Meadow Pepper-Saxifrage ♃

Mathews Del. & Sc   Pub^d by W Baxter Botanic Garden Oxford 1840

SILA'US*.

Linnean Class and Order. Penta'ndria†, Digy'nia.

Natural Order. Umbelli'feræ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.--Umbellatæ, *Linn.*—Rosales; sect. Angelicinæ; type, Angelicacæ; subty. Angelicidæ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

Gen. Char. *Flowers* nearly regular, imperfectly separated, the innermost more or less abortive. *Calyx* none. *Corolla* (see fig. 1.) superior, of 5, equal, inversely egg-shaped, oblong petals, entire or somewhat emarginate, with an inflexed point. *Filaments* (see fig. 1.) 5, thread-shaped, rather spreading, as long as the petals. *Anthers* roundish. *Germen* (see figs. 1 & 2.) inferior, egg-shaped, blunt, slightly compressed, ribbed. *Styles* in the flower very short, afterwards elongated, spreading, cylindrical, half the length of the fruit, tumid at the base. *Stigmas* blunt. *Floral Receptacle* (see fig. 2.) annular, thin, undulated; at first upright, afterwards depressed by the swelling bases of the styles. *Fruit* egg-shaped, a little compressed, somewhat contracted at the upper part, crowned with the floral receptacle, and permanent, spreading or recurved, *styles. Carpels* with 5 sharp, somewhat winged, equal ridges, of which the lateral forms a margin. *Channels* (see fig. 3.) with many *vittæ. Seed* nearly oval. *Universal Involucrum* few-leaved, or none; *partial involucrum* of several strap-spear-shaped leaves.

The obsolete *calyx;* the *corolla* of 5 inversely egg-shaped, entire or somewhat emarginate petals, with an inflexed point; the oval *fruit;* the *carpels* with 5 sharp, slightly winged ridges; and the *channels* with several *vittæ;* will distinguish this from other genera in the same class and order. This genus is nearly allied to *Ligusticum.*

One species British.

SILA'US PRATE'NSIS. Meadow Sulphur-wort. Meadow Pepper-saxifrage. English Saxifrage.

Spec. Char. Leaves thrice pinnate; leaflets strap-spear-shaped, opposite. General involucrum of 1 or 2 leaves, sometimes wanting.

Besser enum. pl. Vohl. p. 43. N^{o}. 1367. *fide* Don.—Gray's Nat. Arr. v. ii. p. 523.—Lindl. Syn. p. 118.—Hook. Brit. Fl. p. 121.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 319.—Macr. Man. Brit. Bot. p. 101.—Bab. Fl. Bath. p. 20.—Lightf. Fl. Shrop. p. 127.—Luxf. Reig. Fl. p. 25.—Mack. Fl. Hibern. p. 118.—*Cnidium Siláus*, Spreig. Prod. p. 40.—Sm. Engl. Fl. v. ii. p. 91.—With. (7th edit.) v. ii. p. 373.—Johnst. Fl. Berw. v. i. p. 71.—Winch's Fl. of Northumb. & Durh. p. 20.—Walker's Fl. of Oxf. p. 83.—Irv. Lond. Fl. p. 196.—Cow. Fl. Guide, p. 27.—*Peucedanum Silaus*, Linn. Sp. Pl. p. 354.—Engl. Bot. t. 2142.—Mart. Fl. Rust.

Fig. 1. A Flower.—Fig. 2. Germen.—Fig. 3. A transverse section of the Fruit.

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* A name used by Pliny, for an umbelliferous plant. Don.

† See folio 48, note †.

‡ See folio 235, *a*.

t. 128.—Jacq. Fl. Austr. t. 15.—Huds. Fl. Angl. (2nd ed.) p. 116.—Willd. Sp. Pl. v. i. pt. II. p. 1406.—Sm. Fl. Brit. v. i. p. 305.—Sibth. Fl. Oxon. p. 95.—Abbot's Fl. Bedf. p 60.—Purt. Midl. Fl. v. i. p. 150.—Relh. Fl. Cant. (3rd edit.) p. 116.—Hook. Fl. Scot. p. 88.—Fl. Devon. pp. 49 & 166.—Mack. Catal. Pl. Irel. p. 28.—*Sium Silaus*, Roth. Fl. Germ. v. i. p. 129.—*Legustium Silaus*, Duby in DC. Fl. Bot. Gall. v. i. p. 230.—*Seseli pratense*, Bauh. Pin. p. 162.—*Seseli pratense nostras*, Ray's Syn. p 216.—*Saxifraga anglicana, facie Seseli pratensis*, Johnson's Gerarde, p. 1047.

LOCALITIES.—In moist meadows and pastures; frequent.

Perennial.—Flowers in August and September.

Root spindle-shaped, wrinkled, blackish on the outside, white within. *Herb* smooth, dark green. *Stem* from 2 to 3 feet high, upright, branched, round, striated, leafy, solid, often of a reddish colour near the ground. *Leaves* twice or thrice pinnate; their leaflets elliptic-spear-shaped, entire; either undivided, or separated, almost to the base, into 2 or 3 segments of the same shape and size. *General Umbels* of about seven unequal rays; *partial ones* small, of from twelve to twenty rays, and upwards. *General Involucrum* of one or two leaves, frequently wanting; *partial Involucrums* of several strap-shaped leaves, which are often deep purple or black at the ends. *Flowers* pale yellow or greenish white, with a thin *floral receptacle*, at first green, and upright, but as the fruit advances, spreading, depressed, confluent with the broad convex bases of the *styles*, and assuming their reddish colour. *Fruit* roundish egg-shaped.

It is a native of humid meadows in most other parts of Europe as well as in Britain; and also in Siberia. The whole plant is fœtid when bruised, and has been supposed to give a bad flavour to milk and butter; but Sir J. E. SMITH says cattle certainly do not eat it, except accidently, or in small quantities, sufficient perhaps to have the effect in question. Where this plant abounds in pastures, it may be found partially cropped, though generally left almost entire.

WHO that has *thought*, but must confess
Whatever he beholds is right?
Thou lov'st the MAKER not, unless
His works delight.

Who that has *eyes*, but needs must read,
Traced on each leaf of every tree,
HIS wond'rous name, who all decreed,
And bade all be!

F.

From the Persian of Sadi.

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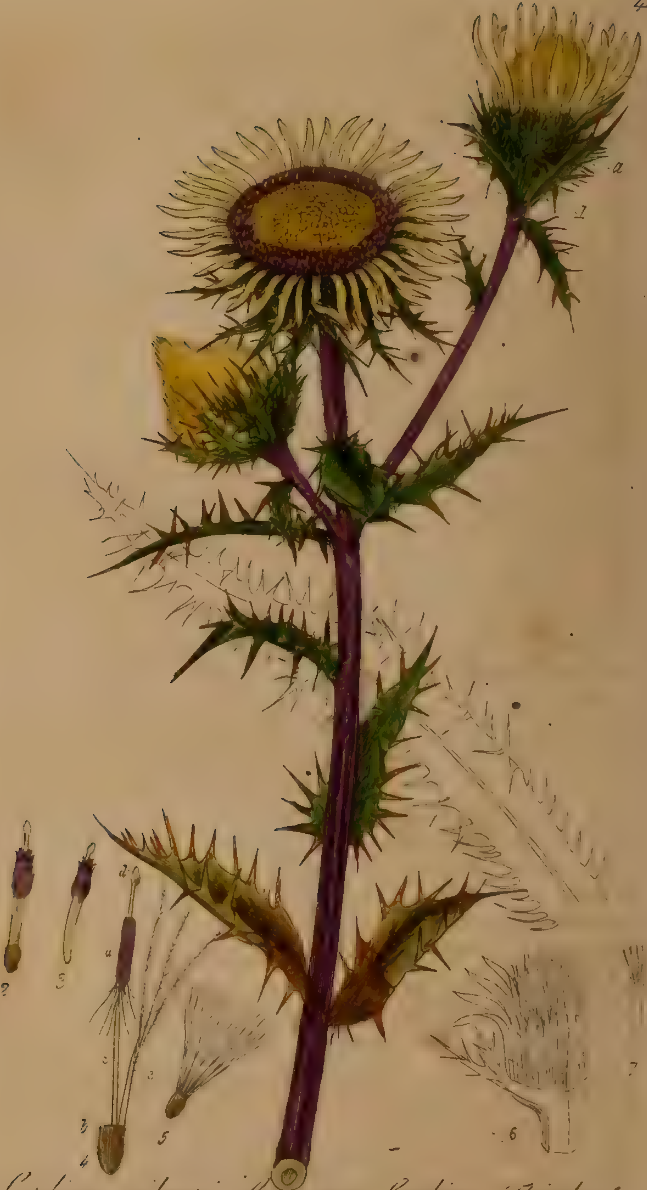
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Carlina vulgaris Common Carline Thistle. ♂

Mathews Del & Sc. Pub.d by W Baxter, Botanic Garden, Oxford 182.

CARLI'NA *.

Linn. Class & Order. SYNGENE'SIA †, POLYGA'MIA, ÆQUALIS ‡.

Natural Order. COMPO'SITÆ §, tribe, CYNAROCEPHALÆ, *Juss.* —Lindl. Syn. pp. 140 & 152; Introd. to Nat. Syst. of Bot. pp. 197 and 200.—Mack. Fl. Hibern. pp. 142 & 154.—Hook. Brit Fl. (4th edit.) p. 410.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CYNAROCEPHALÆ; Rich. by Macgilliv. pp. 454 & 455.—CINAROCEPHALÆ, sect. 1. Juss. Gen. Pl. pp. 171 & 172.—Sm. Gram. of Bot. p. 121.; Engl. Fl. v. iii. p. 334.—SYRINGALES; type, CYNARACEÆ; Burn. Outl. of Bot. pp. 900 & 931.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (see fig. 1.) cylindrical, somewhat tumid, imbricated; the outer scales (fig. 1, *a.*) sinuated, with numerous spines, spreading at the points; the inner generally simple and acute; the innermost (fig. 1, *b.*) much longer, coloured, polished, strap-shaped, spreading horizontally in a circle, and resembling radiant florets. *Corolla* compound, uniform, flat; *florets* numerous, tubular (see figs. 2 & 3.), equal, all on a level, funnel-shaped, perfect; limb in 5 deep, upright segments. *Filaments* (see fig. 4.) 5, hair-like, very short. *Anthers* (see fig. 4, *a.*) in a cylindrical tube, easily separating, each with two deflexed bristles at the base. *Germen* (see fig. 4, *b.*) inversely egg-shaped. *Style* (see fig. 4, *c.*) thread-shaped, scarcely extending beyond the anthers. *Stigma* (see fig. 4, *d.*) oblong, either divided or entire. *Seed-vessel* none but the unaltered calyx. *Seed* conical, roughish, blunt. *Pappus* (see fig. 4, *e.*) feathery. *Receptacle* (see fig. 6.) flat, beset with strap-shaped, chaffy scales, which are split at the top into many bristle-like segments (see fig. 7).

The imbricated, tumid *involucrum*, with the outer scales spinous, and the inner coloured, polished, and resembling a ray; the feathery *pappus;* and the chaffy *receptacle;* will distinguish this from other genera, with a corolla formed of all tubular florets, in the same class and order.

One species British.

CARLI'NA VULGA'RIS. Common Carline-thistle. Common Carline.

SPEC. CHAR. Stem many-flowered, corymbose, cottony. Leaves spear-shaped, unequally spinous and sinuated, downy beneath.

Engl. Bot. t. 1144.—Linn. Sp. Pl. p. 1161.; Fl. Suec. p. 282.—Huds. Fl. Angl. (2nd edit.) p. 355.—Willd. Sp. Pl. v. iii. pt. III. p. 1696—Sm. Fl. Brit. v. ii. p. 857.; Engl. Fl. v. iii. p. 397.—With. (7th edit.) v. iii. p. 917.—Gray's Nat. Arr. v. ii. p. 440.—Lindl. Syn. p. 154.—Hook. Brit. Fl. p. 353.—Macr. Man. Brit. Bot.

Fig. 1. A Flower; *a.* outer scales of the involucrum; *b.* innermost scales of ditto.—Figs. 2 & 3. Separate Florets.—Fig. 4. Stamens and Pistil; *a.* anthers; *b.* germen; *c.* style; *d.* stigma; *e.* a single ray of the pappus.—Fig. 5. A Seed, with its pappus.—Fig. 6. Section of the Receptacle, showing the chaff, &c.—Fig. 7. One of the chaffy Scales of the Receptacle.

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* Contracted from CAROLINA, from tradition that the plant was shown by an angel to CHARLEMAGNE, as a remedy for the plague, which prevailed in his army.

† See folio 91, n. †. ‡ See folio 147, n. ‡. § See folio 27, *a.*

p. 136.—Lightf Fl. Scot. v. i. p. 460.—Sibth. Fl. Oxon. p. 247.—Abbot's Fl. Bedf. p. 177.—Thoms. Pl. Berw. p. 82.—Davies' Welsh Bot. p. 76.—Purt. Midl. Fl. v. ii. p. 385.—Relh. Fl. Cant. (3rd edit.) p. 333.—Hook. Fl. Scot. p. 238 —Fl. Devon. pp. 134 & 157.—Johnst. Fl. Berw. v. i. p. 180.—Winch's Fl. of Northumb. and Durh. p. 53.—Walker's Fl. of Oxf. p. 233 —Perry's Pl. Varvic. Sel. p. 68.—Bab. Fl. Bath. p. 28. ; Prim. Fl. Sarn. p 54.—Dick. Fl. Abred. p. 50.—Irv. Lond. Fl. p. 149.—Luxf. Reig. Fl. p. 70.—Cow. Fl. Guide, p. 26.—Leigh. Fl. of Shropsh. p. 404.—Mack. Cat. Pl. Irel. p. 72. ; Fl. Hibern. p. 156.—*Carlina sylvestris quibusdam, aliis Atractylis*, Ray's Syn. p. 175.—Bauh. Hist. v. iii. pt. I. lib. 25. p. 81.—*Carlina sylvestris major*, Johnson's Gerarde, p. 1159.

Localities.—In dry hilly pastures and fields ; frequent.

Biennial.—Flowers in June and July.

Root tapering, small, with a few stiff fibres. *Stem* upright, from 10 to 15 inches high, tumid just above the root, cylindrical, ribbed, leafy, purple, slightly downy, somewhat corymbose. *Leaves* alternate, more or less stem-clasping, spear-shaped, sinuated and wavy, green, veiny, rigid, the margins armed with numerous yellow prickles ; smooth above, usually downy or woolly beneath. *Flowers* rather handsome, terminal, solitary, of a singular aspect, and not inelegantly variegated. *Involucrum* imbricated, more or less cottony ; *outer scales* (fig. 1. *a.*) spear-shaped, acute, lax, their margins armed with simple and branched prickles ; *innermost scales* strap-shaped, unarmed, entire, membranous, cream-coloured, polished, forming a ray to the flowers, hygrometrical, changing their position according to the moisture of the atmosphere. *Florets* numerous, red at the top, straw-coloured below. *Anthers* with 2 bristles at the base. *Stigmas* yellow. *Pappus* (see fig. 5.) sessile, feathery, awl-shaped at the base, a little above which it usually divides into 3 or 4 bristle-shaped, feathery branches (fig. 4, *e.*) *Scales* of the *Receptacle* as long as the florets, divided in the upper part into several bristle-like segments (fig. 7).

This species is said to be a native throughout the whole of Europe, in dry, sandy pastures. Its presence indicates a very barren soil. When it is confined to local spots hand-weeding, Mr. Holdich says, may be serviceable; but when spreading generally, he recommends the farmer to lose no time in using the plough, harrow, and horse-hoe, and a judicious course of cleansing crops before returning the land to permanent pasture.

According to the observations of Linnæus, goats eat this plant, but cows refuse it. It was formerly much extolled as a remedy in hysterical cases, but it has now wholly fallen into disuse. Its flowers expand in dry, and close in moist weather, and, as they retain this property for a long time, they are often fixed against the cottage doors in Germany, France, and Spain, by way of hygrometers.

The spreading tuft of down with which the seeds are crowned, and by which they are wafted through the air, did not escape the notice of Ossian, who fancifully describes "the Zephrys sporting on the plain, pursuing the Thistle's beard."

The whole plant is of a dry and rigid habit, and after it has perfected its seeds turns white and shrivels, in which state it often remains through the winter, or even second year, as Linnæus observes, a mournful spectacle.

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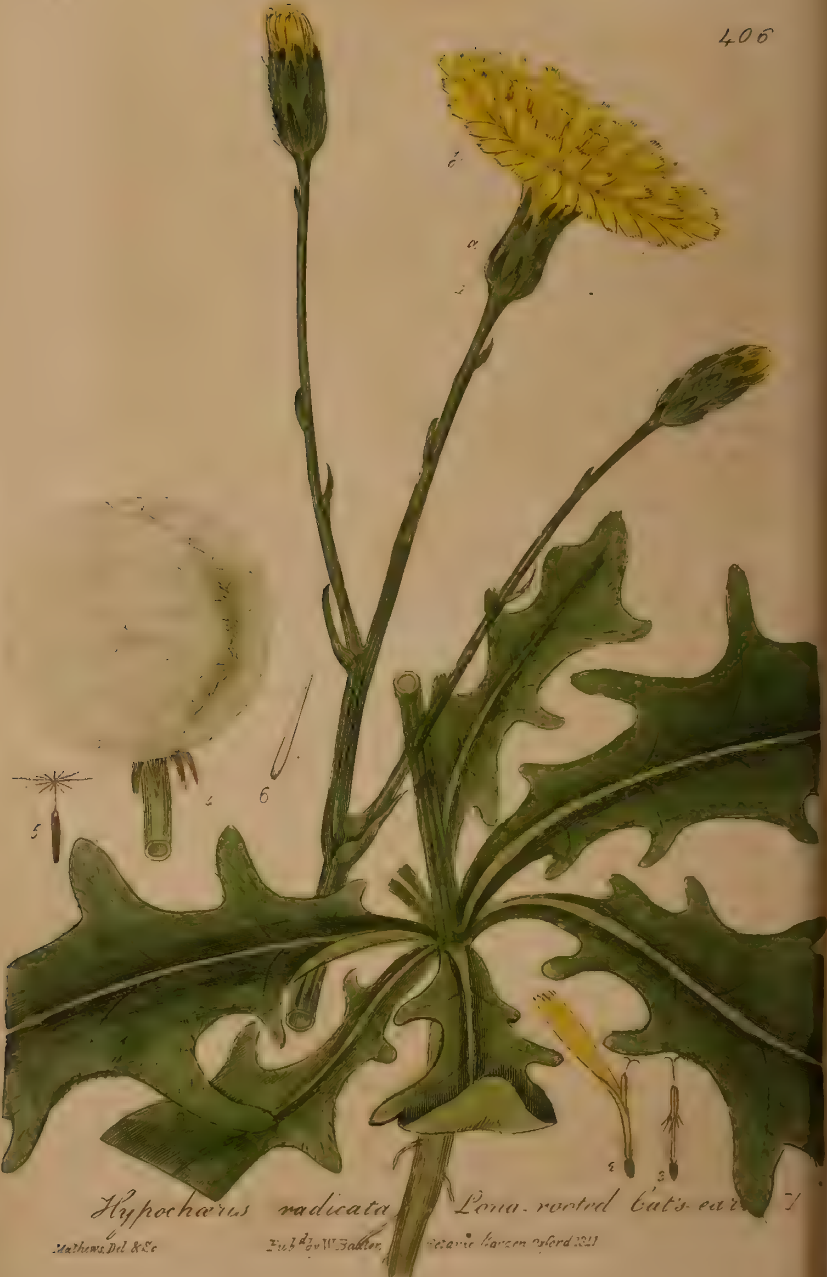

Hypocharis radicata. Long-rooted Cat's-ear

Mathews Del & Sc

Pub^d by W. Baxter, Botanic Garden Oxford [illegible]

HYPOCHŒ'RIS *.

Linnean Class & Order. SYNGENE'SIA †, POLYGA'MIA, ÆQUALIS ‡. *Natural Order.* COMPO'SITÆ §, *(Linn.)* tribe, CICHORA'CEÆ, Lindl. Syn. pp. 140 & 156.; Introd. to Nat. Syst. of Bot. pp. 197 and 201.—Loud. Hort. Brit. pp. 520 and 521.—Mack. Fl. Hibern. pp. 142 & 159.—Hook. Brit. Fl. (4th ed.) p. 410.—CICHORA'CEÆ, Juss. Gen. Pl. p. 158.—Sm. Gr. of Bot. p. 120.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—SYRINGALES; subord. ASTEROSÆ; type, CICHORACEÆ; Burn. Outl. of Bot. pp. 900, 901, & 935.

GEN. CHAR. *Involucrum (common calyx)* (fig. 1, *a.*) oblong, imbricated, with spear-shaped, pointed scales, the outer ones gradually smaller, all permanent, unchanged. *Corolla* (fig. 1, *b.*) compound, of numerous, imbricated, uniform, perfect, strap-shaped, blunt, 5-toothed *florets* (fig. 2.). *Filaments* (see fig. 3.) 5, hair-like, very short. *Anthers* (see fig. 3.) in a cylindrical tube. *Germen* (see figs. 2 & 3.) inversely egg-shaped. *Style* (see figs, 2 & 3.) thread-shaped, prominent. *Stigmas* recurved. *Seed-vessel* none, except the permanent, finally spreading, or reflexed calyx. *Seed* (see fig. 5.) oblong, striated, often beaked. *Pappus* (see figs. 4 & 5.) feathery, stalked, or partly sessile. *Receptacle* chaffy, with strap-spear-shaped, smooth scales (see fig. 6.), as long as the seeds, or longer.

The oblong, imbricated *involucrum*; the striated, often beaked, *seed*; the feathery *pappus*; and the chaffy *receptacle*; will distinguish this from other genera, with all strap-shaped florets, in the same class and order.

Three species British.

HYPOCHŒ'RIS RADICATA. Long-rooted Cat's Tongue. Cat's Ear. Rough Branched Dandelion.

SPEC. CHAR. Stem branched, leafless, smooth. Peduncles with small scales. Leaves runcinate, bluntish, rough. Pappus of all the seeds stalked.

Engl. Bot. t. 831.—Curt. Fl. Lond. t. 152.—Fl. Dan. t. 150.—Linn. Sp. Pl. p. 1140.—Huds. Fl. Angl. (2nd edit.) p. 347.—Willd. Sp. Pl. v. iii. pt. III. p. 1622.—Sm. Fl. Brit. v. ii. p. 842.; Engl. Fl. v. iii. p. 376.—With. (7th ed.) v. iii. p. 903.—Lindl. Syn. (1st edit.) p. 161.—Hook. Brit. Fl. p. 348.—Lightf. Fl. Scot. v. i. p. 443.—Sibth. Fl. Oxon. p. 242.—Abbot's Fl. Bedf. p. 172.—Thoms. Pl. of Berw. p. 80.—Davies' Welsh Bot. p. 75.—Purt. Midl. Fl. v. ii. p. 377.—Relh. Fl. Cant. (3rd ed.) p. 326.—Hook. Fl. Scot. p. 234.—Grev. Fl. Edin. p. 170.—Fl. Devon. pp. 131 & 156.—Johnst. Fl. of Berw. v. i. p. 176.—Winch's Fl. of Northumbl. and Durh. p. 52.—Walker's Fl. of Oxf. p. 227—Bab. Fl. Bath. p. 29.; Prim. Fl. Sarn. p. 56.—Dick. Fl. Abred. p. 50.—Irv. Lond. Fl. p. 151.—Luxf. Reig. Fl. p. 68.—Cow. Fl. Guide, p. 35.—Leigh. Fl. Shrop. p. 388.—Mack. Catal. Pl. Irel. p. 70.; Fl. Hibern. p. 165.—*Achyrophorus radicatus*, Scop. Fl. Carn. n. 987.—Gray's Nat. Arr. v. ii. p. 427.—Macr. Man. Brit, Bot. p. 140.—Lindl. Syn. (2nd edit.) p. 161.—*Hieracium longius radicatum*, Ray's Syn. p. 165.—Johnson's Gerarde, p. 298.—*Hieracium dentis leonis folio obtuso majus*, Bauh. Pin. p. 127.

Fig. 1. A Flower; *a.* the involucrum, or common calyx; *b.* the corolla.—Fig. 2. A separate Floret.—Fig. 3. Stamens and Pistil.—Fig 4. A Head of Seeds, with their Pappus.—Fig. 5. A single Seed, with its stalked pappus or down.—Fig. 6. A Scale of the Receptacle.

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* From *upo*, Gr. *for*; and *choiros*, Gr. *a hog*; the roots being eaten by that animal. HOOKER.

† See folio 31, n. †. ‡ See folio 147, n. ‡ § See folio 27, *a*.

LOCALITIES.—In meadows, pastures, and waste places; common.
Perennial.—Flowers from June to September.

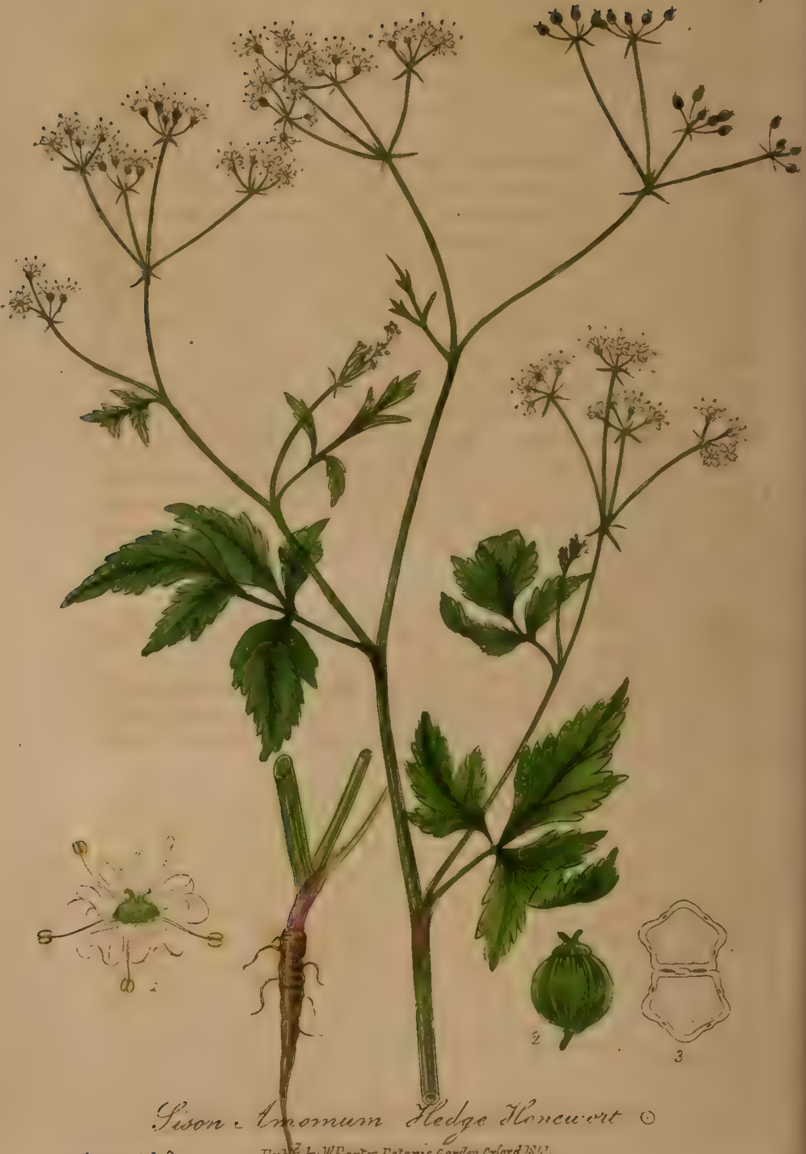
Root strong, tapering, running deep into the ground; brown externally, white and milky within. *Stems* several, a foot or more high, branched, spreading, somewhat angular, smooth, rather glaucous, without leaves, but furnished with small, scattered, spear-shaped scales. *Leaves* all radical, spreading in a circle on the ground, flattish, oblong, bluntish, runcinate, the segments and sinuses rounded, rough with long white simple hairs, which proceed from little prominent points. *Peduncles (flowerstalks)* longish, hollow, a little thickened upwards, clothed with small, scattered, appressed, awl-shaped *bracteas*. *Flowers* rather large, solitary, bright yellow. *Involucrum* of several, imbricated, unequal scales (see fig. 1, *a.*); the outer of which are short, the inner ones longer, spear-shaped, pointed, strongly keeled, smooth except the keel which is rough, with rather long, white, rigid hairs, and a few shorter black ones towards the apex; the margins of the upper half minutely fringed, densely so at the apex. *Florets* (see fig. 2.) strap-shaped, blunt, deeply and acutely 5-toothed at the summit, tubular at the base, with a tuft of yellow hairs at the orifice of the tube. *Seeds* oblong, striated, tawny. *Pappus* (see fig. 5.) of all of them stalked and feathery. *Scales of the Receptacle* (see fig. 6.) thin, membranous, spear-shaped, taper-pointed, keeled, distantly fringed in the upper part.

A dwarf variety, with a simple stem, or with only one flower, and that almost sessile on the side, sometimes occurs in barren soil.

The flowers of this species, according to the observations of LINNÆUS, open between seven and eight o'clock in the morning, and close at two in the afternoon. Dr. WITHERING says, it is the *Porcellia* of old authors, supposed to be a favourite food with pigs; though probably not more so than some others of the same class; as *Swines' Succory (Lapsana pusilla)*, and *Sow-thistle (Sonchus Oleraceous*, t. 147).

" Oh, flowers! sweet goodly flowers! Ye were loved, in times of old,
And better worth were crowns of flowers than crowns of beaten gold.
They wore ye at the marriage-feast, when merry pipes were blown;
And, o'er their most beloved dead, fit emblems, were ye strewn!
—The Poets ever loved ye, for in their souls ye wrought,
Like seas, and stars, and mountains old, enkindling lofty thought!
But—greater far than all—our blessed LORD did see
How beautiful the lilies grew, in the fields of Galilee:—
Consider now these flowers, He said, they toil not, neither spin,—
And GOD, himself, the garment made which they are clothed in;—
In the perfectness of beauty each several flower is made,
And Solomon, in all his pomp, was not like them arrayed;—
They are but of the field, yet GOD has clothed them as ye see!—
Oh, how much more, immortal souls, will He not care for ye!"

MARY HOWITT.



Sison Amomum Hedge Honewort ⊙

Mathews Del & Sc

Pub^d by W. Baxter Botanic Garden Oxford 1841.

SI'SON[*].

Linnean Class and Order. PENTA'NDRIA[†], DIGY'NIA.

Natural Order. UMBELLI'FERÆ[‡], Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* (see fig. 1.) all uniform, perfect, and regular. *Calyx* an obsolete margin. *Corolla* (fig. 1.) of 5, roundish, curved, deeply emarginate, inflexed petals. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, about as long as the corolla. *Anthers* roundish. *Styles* (see fig. 1.) very short and thick, each with a large, tumid, sometimes depressed base, permanent. *Fruit* (see fig. 2.) egg-shaped, compressed at the sides. *Carpels* (see fig. 3.) with 5, equal, filiform *ridges*, of which the 2 lateral ones form a margin. *Channels* with 1 short, club-shaped *vitta* in each. *Seed* very convex, flattish in front. *Carpophore* (central column to which the carpels are attached) 2-parted. *Universal* and *partial Involucrum* of few leaves. *Flowers* white, or cream-coloured.

The obsolete *calyx;* the roundish, curved, deeply notched, inflexed *petals;* the egg-shaped, compressed *fruit;* and the *carpels* with 5 filiform, equal ridges, with a single, short, club-shaped *vitta* in each channel; will distinguish this from other genera in the same class and order.

One species British.

SI'SON AMO'MUM. Ginger-seeded Stone-parsley. Hedge Honewort. Bastard Stone-parsley.

SPEC. CHAR. Stem upright, round, panicled, very much branched. Leaves pinnate; leaflets of the lower ones egg-shaped, lobed, deeply cut, and serrated; of the upper ones strap-spear-shaped. Fruit roundish egg-shaped.

Engl. Bot. t. 954.—Jacq. Hort. Vind. v. iii. t. 17.—Linn. Sp. Pl. p. 362.—Huds. Fl. Angl. (2nd ed.) p. 119.—Willd. Sp. Pl. v. i. pt. II. p. 1436.—Sm. Fl. Brit. v. i. p. 315.; Eng. Fl. v. ii. p. 60.—With. (7th ed.) v. ii. p 380.—Lind. Syn. p. 122.—Hook. Brit. Fl. p. 128.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 286.—Macr. Man. Brit. Bot. p. 98.—Sibth. Fl. Oxon. p. 97.—Abbot's Fl. Bedf. p. 63.—Purt. Midl. Fl. v. i. p. 151.—Relh. Fl. Cant. (3rd ed.) p, 119.—Fl. Devon. pp. 51 & 167.—Winch's Fl. of Northumb. and Durham, p. 18.—Walker's Fl. of Oxf. p. 79.—Bab. Fl. Bath. p. 21.; Prim. Fl. Sarn. p. 42.—Irv. Lond. Fl. p. 195.—Luxf. Reig. Fl. p. 24.—Cow. Fl. Guide, p. 48.—Leight. Fl. of Shropshire, p. 131.—*Sison sive officinarum Amomum*, Bauh. Hist. v. iii. pt. II. lib. 27. p. 107.—*Sison quod Amomum officinis nostras*, Bauh. Pin. p. 154.—*Sium aromaticum Sison Off.* Ray's Syn. p. 211.—*Sium aromaticum*, Lamarck's Dict. v. i. p. 405.—Gray's

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Fig. 1. A Flower.—Fig. 2. A Fruit.—Fig. 3. Transverse section of ditto.—*All mugnified.*

[*] From *sizun*, Celtic, *a running stream;* some of the plants formerly placed in this genus delighting in such situations. Sir W. J. HOOKER. Or, from *seio, seiso*, Gr. to *shake*, as agitated by waters. Dr. WITHERING.

[†] See folio 48, note †. [‡] See folio 235, *a*.

Nat. Arr. v. ii. p. 506.—*Seseli Amomum*, Scop. Fl. Carn. (2nd edit.) v. i. p 213. N^{o}. 355.—*Cicuta Amomum*, Crantz. Fl. Austr. p. 96.—*Petroselinum macedonicum Fuschsii*, Johnson's Gerarde, p. 1016.

Localities.—In rather moist spots under hedges, where the soil is marly or chalky. More or less frequent in most counties in England and Wales. Very rare in Scotland, the only localities given for it, in Mr. Watson's *New Botanist's Guide*, being Hirsell Lough; and near Coldstream, Berwickshire. I believe it has not been found at all in Ireland, at least it has not found a place in Mr. Mackay's excellent Flora of that country.

Biennial.—Flowers in August.

Root tapering, with many lateral fibres. *Stem* 2 or 3 feet high, upright, with numerous, alternate, rigid, wiry branches, a little zigzag, striated, smooth, leafy. *Leaves* dark green, smooth, pinnate; the odd *leaflet* lobed; all somewhat egg-shaped, deeply cut and serrated; those of the upper leaves narrower, sharper, more divided, 3-lobed, often pinnatifid. *Umbels* numerous, terminal, solitary, drooping before flowering, upright when in flower, each of 4 unequal rays, seldom more, the middle one the shortest; *partial umbels* also of few and unequal rays. *Universal Involucrum* of from 2 to 4, spear-shaped, small, and slender leaves; *partial one* of about 4 leaves, still smaller. *Flowers* (see fig. 1.) white or cream-coloured, all regular and fertile. *Calyx* scarcely discernable. *Petals* broad, roundish or inversely heart-shaped, with an incurved point. *Styles* very short, each with a large globose base; and blunt, spreading, permanent *stigmas*. *Fruit* roundish egg-shaped, broad, short, moderately compressed. *Carpels* half egg-shaped, each with 3 dorsal, not very prominent, ridges, at a distance from the border.

This plant is a native of France, Italy, Sicily, Greece, &c., as well as of England. The whole herb has a peculiar nauseous scent when bruised. The dry *seeds* are warm and aromatic to the taste, and are put into Venice treacle, as a substitute for the real *Amomum*.

"The more we extend our researches into the vegetable kingdom, the more will every susceptible mind be excited to proceed. We shall find the most delicate and elaborate processes in ceaseless progression on the mountains and in the valleys—the meadows and the recesses of our woods, all subject to immutable laws. We shall find colours unrivalled, odours inimitable, and forms exhaustless in variety and grace, daily developed in the grand laboratory of Nature, demanding only to be seen to extort our unqualified admiration, and leading us irresistibly to contemplate the glory of that Almighty Being from whom so many wonders emanate; and

'Who, not content
With every food of life to nourish man,
Hath made all nature beauty to his eye
And music to his ear.'"

Dr. Greville.

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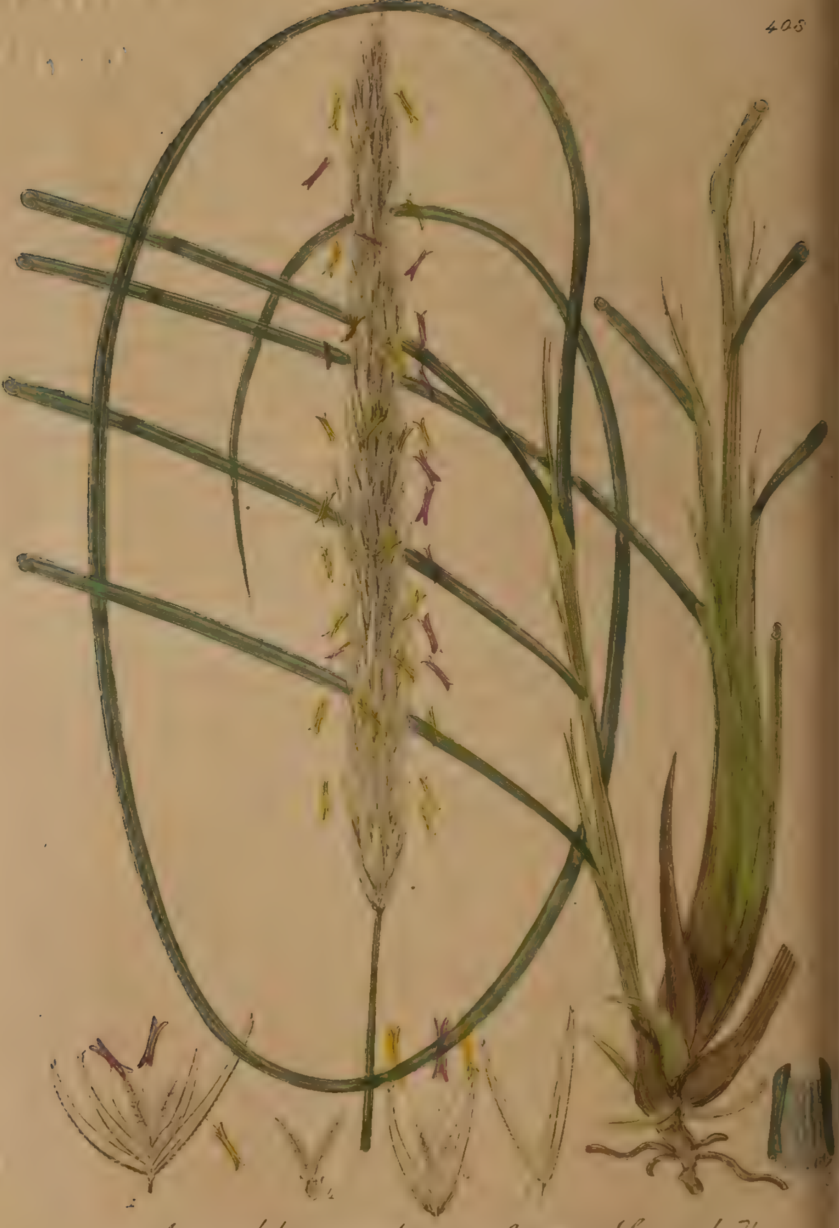

Ammophila arundinacea. Common Sea-reed. ♃

Mathews Del. & Sc

Pub.d by W.Baxter Botanic Garden Oxford 1841

AMMO'PHILA*.

Linnean Class and Order. TRIA'NDRIA†, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.* GRAMINALES; sect. FESTUCINÆ; type, PHALARIDACEÆ; Burn. Outl. of Bot. v.i. pp. 359 & 369.

GEN. CHAR. *Inflorescence* panicled, panicle compact, spike-like. *Spikelets* (fig. 1.) single-flowered. *Calyx* (fig. 2.) of 2, nearly equal, spear-shaped, pointed, keeled, awnless *glumes*, the lower smaller, and rather longer than the corolla. *Corolla* (fig. 3.) of 2, nearly equal, spear-shaped, keeled, compressed, pointed *paleæ*, the lower slightly awned under the apex, with a tuft of hairs at the base. *Nectary* (see fig. 4.) of 2, minute scales, longer than the germen. *Filaments* (see figs. 1 & 3.) 3, hair-like, about the length of the calyx. *Anthers* cloven at each end. *Germen* (see fig. 4.) inversely egg-shaped, or oblong. *Styles* (see figs. 1, 3, & 4.) short. *Stigmas* feathery, tufted. *Seed* oblong, pointed at each end.

The close spike-like *panicle;* the single-flowered *spikelets;* the *calyx* of 2, nearly equal, keeled *glumes*, longer than the corolla; and the *corolla* of 2 *paleæ*, the lower of which is awned under the apex, with a tuft of hairs at the base; will distinguish this from other genera in the same class and order.

One species British.

AMMO'PHILA ARUNDINA'CEA. Sea Mat-weed. Common Sea-reed. Marram. Helme.

SPEC. CHAR. Panicle cylindrical, acuminate. Glumes acute, tuft of hairs one-third the length of the corolla.

Host's Gram. Austr. v. iv. p. 24. t. 41.—Hook Brit. Fl. p. 29.—Dick. Fl. Abred. p. 22.—Irv. Lond. Fl. p. 95.—Mack. Fl. Hibern. p. 296.—*Ammophila arenaria*, Lindl. Syn. p. 303.—Macr. Man. Brit. Bot. p. 264.—Bab. Prim. Fl. Sarn. p. 107.—*Arundo arenaria*, Engl. Bot. t. 520.—Knapp's Gram. Brit. t. 99.—Mart. Fl. Rust. t. 32.—Fl. Dan. t. 917.—Linn. Sp. Pl. p. 121.—Huds. Fl. Angl. (2nd edit.) p. 54.—Willd. Sp. Pl. v. i. pt. I. p. 457.—Sm. Fl. Brit. v. i. p. 148.; Engl. Fl. v. i. p. 171.—With. (7th edit.) v. ii. p. 198.—Schred. Germ. v. i. p. 221. t. 5. f. 2.—Lightf. Fl. Scot. v. i. p. 107.—Thoms. Pl. of Berw. p. 15.—Davies' Welsh Bot. p. 12.—Hook. Fl. Scot. p. 27.—Grev. Fl. Edin. p. 17.—Sincl. Hort. Gram. Wob. p. 371, with a plate.—Fl. Devon. pp. 13 & 121.—Johnst. Fl. of Berw. v. i. p. 29.—Winch's Fl. of Northumb. and Durh. p. 8.—Murr. Northern Fl. p. 47.—Mack. Cat. of Pl. Irel. p. 16.—*Calamagrostis arenaria*, Roth. Fl. Germ. v. ii. pt. I. p. 93.—With. (4th edit.) v. ii. p. 123.—*Psamma arenaria*, Roem. Syst. Veg. p. 845.—Gray's Nat. Arr. v. ii. p. 144.—*Gramen sparteum spicatum foliis mucronatis longioribus, vel spica secalina*, Ray's Syn. p. 393.—*Gramen spicatum, secalinum, maritimum, maximum, spicâ longiore*, Scheuchz. Agrost. p. 138. t. 3. f. 8.—*Spartum Anglicanum*, Johnson's Gerarde, p. 42.—*Spartum marinum nostras*, Park. Theat. p. 1198.

LOCALITIES.—On sandy sea-shores.—Frequent on the sandy sea-shores of nearly all the maritime counties of England, Wales, Scotland, and Ireland.

Fig. 1. A Floret.—Fig. 2. Calyx.—Fig. 3. Corolla.—Fig. 4. Nectary, Germen, Styles, and Stigmas.—Fig. 5. Section of a Leaf.—*All magnified.*

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* From *ammos*, Gr. *sand*; and *philos*, Gr. a *lover*.

† See folio 56, n. †.

Perennial.—Flowers in June and July.

Root jointed, extensively creeping, often extending to a great many feet. *Plant* glaucous. *Culms* ascending, 2 or 3 feet high, cylindrical, jointed, finely striated, very smooth, almost solid. *Leaves* very long, narrow, rigid, sharp-pointed, their margins rolled in so as to give them the appearance of rush-leaves; furrowed, whitish, and pubescent above (see fig. 5.); dark-green, and smooth beneath. *Sheaths* lightish-brown, striated, nearly or quite smooth. *Stipula (ligula)* membranous, spear-shaped, pointed, nearly an inch long, mostly divided, or torn. *Panicle* upright, quite close, cylindrical, tapering a little at each end, straw-coloured, many-flowered, and so perfectly resembling a spike, that, without inspection, it might be mistaken for one; its branches short, upright, not much divided, close-pressed, angular, and rough. *Glumes* (see figs. 1 & 2.) nearly equal, spear-shaped, compressed, with a rough keel; the inner one rather the largest, with a rib at each side; outer one with a minute point below the summit. *Paleæ* (see figs. 1 & 3.) compressed, roughish, dull, of the same texture as the glumes, but rather smaller, and more ribbed, the outer one bearing a small, short, dorsal *awn*, below the top. *Hairs* (see fig. 3.) chiefly attached to the inner palea, and scarcely half its length. *Nectary* (see fig. 4.) longer than the germen. *Styles* (see fig. 4.) distinct, upright. *Stigmas* long, cylindrical, feathery. *Seed* oblong, pointed at the upper end.

This grass grows only on the driest sea-shores, where it is of the greatest utility, particularly when combined with the *Elymus arenarius*, in binding the sands of the sea-shore, and thereby raising a natural barrier the most lasting against the encroachments of the ocean upon the land; and also in preventing the wind from dispersing the sand over the adjoining fields, which is not unfrequently the case where this plant is wanting. Many a fertile acre has been covered with sand and rendered useless, which might have been prevented by sowing the seeds, or by planting small bundles of this plant at distances of about a foot and a half apart; a method introduced by Mr. MACLEOD, of Harris, in the Hebrides of Scotland, and tried extensively on his estate. For some interesting illustrations of its utility in this respect, see CUVIER's *Essay on the Theory of the Earth*, (5th edit.) p. 28, and pp. 368—375. Mr. WOODWARD says, it is planted on some of the flat coasts of Norfolk to repel the sea, and is also suitable to the light lands of that county. He observes, that as soon as it takes root a sand-hill gathers round it, and thinks that some of our sandy cliffs may have thus originated. It is also supposed that this plant, together with a few others which seem designed by nature to bind the loose sands of the sea-shore by their creeping roots, or stolones, are the means of forming the low round-topped hills, called Links, along a considerable part of our northern coasts. Mr. SINCLAIR observes, so far back as the reign of William the Third, the important value of this grass, and *Elymus arenarius*, was so well appreciated as to induce the Scottish Parliament of that period to pass an act for their preservation on the sea-coasts of Scotland. And these provisions were, by the British Parliament, in the reign of George the Second, followed up by further enactments, extending the operation of the Scottish law to the coasts of England, and imposing further penalties for its inviolability; so that it was rendered penal, not only for any individual (without even excepting the lord of the manor) to cut the bent, but for any one to be in possession of any within eight miles of the coast. The inhabitants of Newborough, in Anglesey, subsist chiefly by manufacturing this Reed into mats and ropes. It also makes excellent floor-brushes. In the outer Hebrides it is made into ropes for various uses, mats for pack-saddles, bags, mats, and vessels for preparing and keeping grain and meal; and, lastly, into hats.

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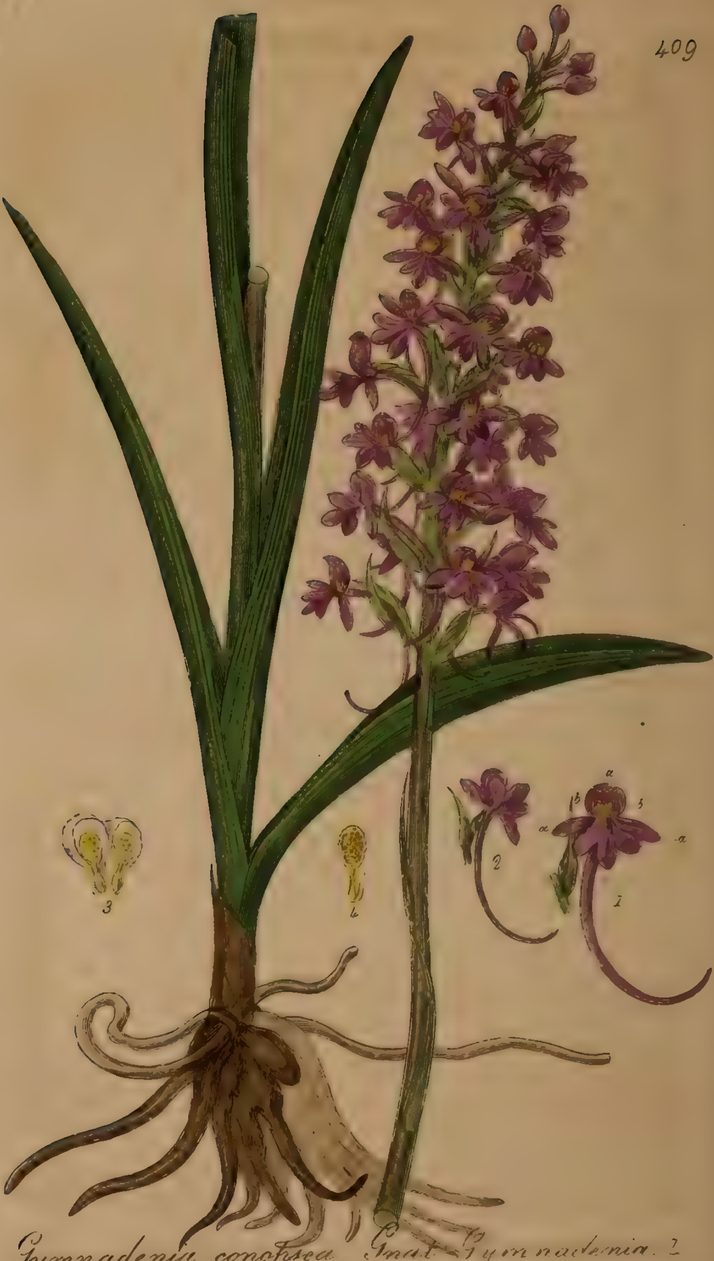

Gymnadenia conopsea. Gnat Gymnadenia.

Mathews, Del & Sc.   Pub^d by W. Baxter Botanic Garden Oxford [illegible]

GYMNADE'NIA[*].

Linnean Class and Order. GYNA'NDRIA[†], MONA'NDRIA.

Natural Order. ORCHI'DEÆ[‡], *Linn.*—Juss. Gen. Pl. p. 64.—Sm. Gr. of Bot. p. 81.; Engl. Fl. v. iv. p. 3.—Lindl. Syn. p. 256; Introd. to Nat. Syst. of Bot. p. 262.—Rich. by Macgilliv. p. 412.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 274.—Macr. Man. Brit. Bot. p. 224.—Hook. Brit. Fl. (4th edit.) p. 425.—PALMARES; order, MUSALES; sect. ORCHIDINÆ; type, ORCHIDACEÆ; Burn. Outl. of Bot. v. i. pp. 391, 437, 458, & 461.

GEN. CHAR. *Perianthium*[§] *(Calyx and Corolla)* (see fig. 1.) superior, coloured. *Sepals* (fig. 1. *a, a, a.*) slightly concave, spreading or converging. *Petals* (fig. 1. *b, b.*) 2, rather smaller than the sepals, converging. *Lip (nectary)* (see fig. 1. *c.*) coloured, 3-lobed, spurred. *Anther* terminal, with 2 parallel lobes. *Pollen-masses* (see figs. 3 & 4.) stalked, with 2 naked glands. *Germen* oblong, or nearly cylindrical, furrowed, spirally twisted. *Style (column)* thick and short. *Stigma* a shining moist depression in front of the style. *Capsule* oblong, spiral. *Seeds* very numerous, oval, each in a light chaffy *tunic*, extending at both ends.

The long *spur;* and the naked, and approximated *glands* of the stalks of the *pollen-masses;* will distinguish this from other genera in the same class and order.

One species British.

GYMNADE'NIA CONO'PSEA. Great Gymnadenia. Fragrant Gymnadenia. Red Handed-Orchis. Aromatic Orchis.

SPEC. CHAR. Lip in 3, equal, entire, blunt lobes. Spur very slender, twice as long as the germen. Tubers palmate.

GYMNADENIA CONOPSEA, *Dr. R. Brown*, in Ait. Hort. Kew. (2nd edit.) vol. v. p. 191.—Gray's Nat. Arr. v. ii. p. 205.—Lindl. Syn. p. 261.—Hook. Brit. Fl. p. 373.—Macr. Man. Brit. Bot. p. 227.—Hook. Fl. Scot. p. 251.—Grev. Fl. Edin. p. 184.—Bab. Fl. Bath. p. 48.; Suppl. p. 94.—Dick. Fl. Abred. p. 52.—Luxf. Reig. Fl. p. 75.—Leight. Fl. of Shropsh. p. 429.—Mack. Catal Pl. of Irel. p. 76.; Fl. Hibern. p. 277.—*Orchis conopsea*, Linn. Sp. Pl. p. 1335.—Engl. Bot. t. 10.—Fl. Dan. t. 224.—Huds. Fl. Angl. (2nd ed.) p. 385.—Willd. Sp. Pl. v. iv. pt. I. p. 32.—Sm. Fl. Brit. v. iii. p. 926.; Engl. Fl. v. iv. p. 23.—With. (7th edit.) v. ii. p. 32.—Lightf. Fl. Scot. v. i. p. 518.—Sibth. Fl. Oxon. p. 11.—Abbot's Fl. Bedf. p. 193.—Purt. Midl. Fl. v. ii. p. 422.—Relh. Fl. Cant. (3rd ed.) p. 361.—Johnst. Fl. of Berw. v. i. p. 192.—Rev. G. E. Smith's Pl. S. Kent, p. 51.—Winch's Fl. of Northumb. and Durh. p. 56.—Walker's Fl. of Oxf. p. 255.—Perry's Pl. Varvic. Select. p. 72.—Irv. Lond. Fl. p. 110.—*Orchis palmata minor calcaribus oblongis*, Bauh. Pin. p. 85.—Rudb. Elys. v. ii. p. 212. f. 5.—Vaill. Par. p. 153. t. 30. f. 8.—*O. palmata angustifolia minor*, Bauh. Pin. p. 85.—Rudb. Elys. v. ii. p. 212. f. 6.—*O. palmata montana maxima*, Bauh. Pin. p. 86.—Rudb. Elys. v. ii. p. 216. f. 18.—*O. palmata pratensis angustifolia major*, Bauh. Pin. p. 85.—*O. palmata caryophyllata*, Bauh. Pin. p. 86.—Rudb. Elys. v. ii. p. 213. f. 8.—*O. palmata angustifolia minor odoratissima*, Rudb. Elys. v. ii. p. 213. f. 7.—*Palmata rubella, cum longis calcaribus rubellis*, Bauh. Hist. v. ii. p. 778, with

Fig. 1. Front view of a Flower; *a, a, a,* the Sepals; *b, b,* the Petals; *c.* the Lip.—Fig. 2. Back view of a Flower.—Fig. 3. Anther and Pollen-masses.—Fig. 4. One of the Pollen-masses.

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[*] From *gumnos*, Gr. *naked;* and *adno*, Gr. a *gland;* one of the essential characters of this genus.

[†] See fol. 8, note †. [‡] See fol. 387, *a*. [§] See fol. 33, note ‡.

a figure.—Ray's Syn. p. 381.—*P. caryophyllata*, Bauh. Hist. v. ii. p. 777, with a figure.—*Serapias minor, nitente flore.* Johnson's Gerarde, p. 222.; *S. gariophyllata*, ibid. p. 223.

LOCALITIES.—In rather moist meadows and pastures, and in heathy bogs.—More or less frequent in most counties of ENGLAND, WALES, and IRELAND.—Most abundant in SCOTLAND, where, Sir W. J. HOOKER says, it scents the atmosphere with its fragrance.

Perennial.—Flowers from June to August.

Root distinctly palmate, with several long slender divisions. *Stem* from 12 to 18 inches high, upright, cylindrical below, somewhat angular upwards, smooth, leafy, hollow. *Leaves* strap-spear-shaped, keeled, pointed, bright green; *lower ones* embracing the stem; *upper ones* sessile, decreasing in size upwards. *Spike* cylindrical, 3 inches or more long, variable in density, but usually loose, many-flowered. *Bracteas* spear-shaped, pointed, rather longer than the germen. *Flowers* of a uniform crimson or pale purple in every part, without spots, very fragrant. The upper sepal (fig. 1, *a.*) and the 2 petals (fig. 1, *b*, *b.*) closely approaching, their points bent inwards, and covering the *style* and *anthers*. Two lateral *sepals* (fig. 1, *a*, *a.*) spreading, their margins revolute. *Lip* or *Nectary* (fig. 1. *c.*) minutely downy, in 3 uniform, equal, entire, rather deep, flat lobes. *Spur* (see figs 1 & 2.) very slender, twice as long as the germen, pointing downwards, curved, cylindrical, pointed. The two *cells* of the *anthers* (fig. 3.) are perforated at the base, through which the naked, large, and oblong *glands* of the *stalks* of the *pollen-masses* appear.

The great length of the slender curved spur of this species will readily distinguish it from most other British Orchideæ. It sometimes occurs with a white flower; and the Rev. G. E. SMITH. in his very interesting account of the Plants of South Kent, mentions a variety with spotted purple flowers having been found at the Cherry Garden, near Folkstone, Kent; and a singular variety without the spur, or rather with a short mucro instead, was found by Mr. W. PAMPLIN, jun., on Juniper-hill, near Dorking, in 1833.

Gymnadenia conopsea is an elegant and rather showy plant, and is highly deserving a place in the flower garden. It likes a somewhat moist and shady situation, but, like most other Orchideæ, it is not of very easy culture. Those who wish for information on the subject of cultivating this curious tribe of plants, will do well to consult Mr. LOUDON's *Gardener's Magazine*, vol. i. p. 464—466.; vol. ii. p. 285.; and vol. vii. p. 306.

The British genera of ORCHIDEÆ are thus arranged by Professor LINDLEY.

Section I. Pollen simple, or consisting of granules in a lax state of cohesion,

Tribe 1. NEOTTIEÆ. Anther parallel with the stigma, and erect.—1. *Goodyera*, t. 309.—2. *Spiranthes*, t. 63.—3. *Listera*, t. 357.

Tribe 2. ARETHUSEÆ. Anther terminal, like a lid.—4. *Corallorhiza.*—5. *Epipactis*, t. 317.

Section II. Pollen cohering in grains or masses, which are indefinite in number, and waxy.

Tribe 3. OPHRYDEÆ.—6. *Orchis*, t. 213.—7. *Gymnadenia*, t. 409.—8. *Platanthera.*—9. *Peristylus*, t. 387.—10. *Aceras*, t. 305.—11. *Ophrys*, t. 8.—12. *Herminium*, t. 295.

Section III. Pollen cohering in grains or masses, which are definite in number, and waxy.

Tribe 4. MALAXIDEÆ.—13. *Malaxis*, t. 394.—14. *Liparis.*

Section IV. Lateral anthers fertile, intermediate sterile and petaloid.

Tribe 5. CYPRIPEDIEÆ.—15. *Cypripedium*, t. 105.

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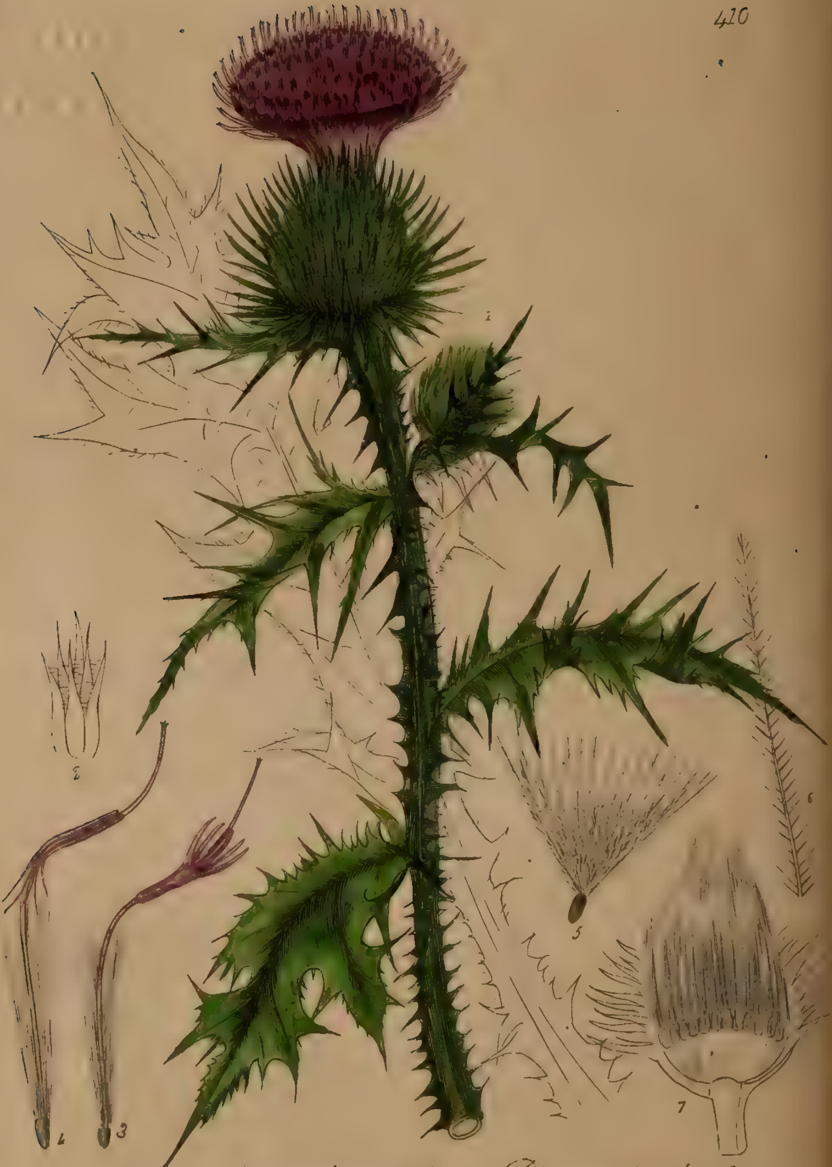

Cnicus lanceolatus Spear Plume-thistle. ♂

Mathews. Del. & Sc. Pub^d by W. Baxter Botanic Garden. Oxford. 1841

CNICUS*.

Linn. Class & Order. SYNGENE'SIA†, POLYGA'MIA, ÆQUALIS‡.

Natural Order. COMPO'SITÆ§, tribe, CYNAROCEPHALÆ, *Juss.* —Lindl. Syn. pp. 140 & 152; Introd. to Nat. Syst. of Bot. pp. 197 and 200.—Mack. Fl. Hibern. pp. 142 & 154.—Hook. Brit Fl. (4th edit.) p. 410.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CYNAROCEPHALÆ; Rich. by Macgilliv. pp. 454 & 455.—CINAROCEPHALÆ, sect. 1. Juss. Gen. Pl. pp. 171 & 172.—Sm. Gram. of Bot. p. 121.; Engl. Fl. v. iii. p. 334.—SYRINGALES; type, CYNARACEÆ; Burn. Outl. of Bot. pp. 900 & 931.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) tumid, imbricated, of numerous, lanceolate, spinous-pointed scales, permanent. *Corolla* compound, nearly uniform; *florets* (see fig. 3.) very numerous, equal, all tubular, and funnel-shaped; tube slender, recurved; limb egg-shaped at the base, with 5 strap-shaped, nearly equidistant, segments. *Filaments* (see fig. 4.) 5, hair-like, very short. *Anthers* (see fig. 4.) united in a cylindrical tube. *Germen* (see figs. 4 & 5,) inversely egg-shaped, short. *Style* (see fig. 4.) thread-shaped, slightly prominent. *Stigma* oblong, more or less cloven, naked. *Seed-vessel* none but the converging unaltered involucrum. *Seed* (see fig. 5.) polished, inversely egg-shaped, with a slender, terminal, short, cylindrical point. *Pappus* (see fig. 5.) sessile, feathery (see fig. 6.), very long, united by a ring at the base, deciduous. *Receptacle* (see fig. 7.) nearly flat, beset with bristly, or very narrow chaffy, scales or hairs, as long as the tubes of the florets.

The tumid *involucrum*, of numerous, imbricated, spinous-pointed scales; the hairy *receptacle;* and the feathery, deciduous *pappus;* will distinguish this from other genera, with tubular *florets*, in the same class and order.

It differs from *Carduus* (t. 177.) in the *pappus* being feathery.

Nine species British.

CNICUS LANCEOLA'TUS. Spear Plume-thistle. Bur-thistle.

SPEC. CHAR. Stem winged. Leaves decurrent, pinnatifid, hispid, with variously-spreading spinous lobes. Involucrum egg-shaped, tomentose, its scales spear-shaped, spreading.

Willd. Sp, Pl. v. iii. pt. III. p. 1666.—Sm. Engl. Fl. v. iii. p. 387.—Lindl. Syn. p. 152.—Hook. Brit. Fl. p. 351.; Fl. Scot. p. 236.—Grev. Fl. Edin. p. 172.—Fl. Devon. pp. 133 & 157.—Johnst. Fl. Berw. v. i. p. 179.—Winch's Fl. of Northumb. and Durh. p. 52.—Walker's Fl. of Oxf. p. 231.—Bab. Fl. Bath. p. 27.—Dick. Fl. Abred. p. 50.—Luxf. Reig. Fl. p. 69.—Cow. Fl. Guide, p. 27.—Mack. Catal. Pl. of Irel. p. 71.; Fl. Hibern. p. 155.—*Carduus lanceolatus*, Linn. Sp. Pl. p. 1149.—Engl. Bot. t. 107.—Mart. Fl. Rust. t. 131.—Huds. Fl. Angl. (2nd edit.) p. 350.—

Fig. 1. Involucrum.—Fig. 2. Separate Scales of the Involucrum.—Fig. 3. A separate Floret.—Fig. 4. Stamens and Pistil.—Fig. 5. A Seed, crowned with its Pappus.—Fig. 6. A single Ray of the Pappus.—Fig. 7. Vertical section of the Receptacle.—Figs. 3, 4, and 6, *magnified.*

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* From *cnizo*, Gr. to *prick* or *wound.*

† See folio 91, note †. ‡ See folio 147, note ‡. § See folio 27, *a.*

Sm. Fl. Brit. v. ii. p. 847.—With. (7th edit.) v. iii. p. 910.—Lightf. Fl. Scot. v. i. p. 450.—Sibth. Fl. Oxon. p. 244.—Abbot's Fl. Bedf. p. 175.—Thomp. Pl. of Berw. p. 81.—Davies' Welsh Bot. p. 75.—Purt. Midl. Fl. v. ii. p. 378.—Relh. Fl. Cant. (3rd edit.) p. 328.—Irv. Lond. Fl. p. 148.—Bab. Prim. Fl. Sarn. p. 55.—Leigh. Fl. Shropsh. p. 401.—*Carduus lanceatus*, Ray's Syn. p. 195.—Johnson's Gerarde, p. 1174.—*Carduus lanceatus latifolius*, Bauh. Pin. p. 385.—*Cirsium lanceolatum*, Gray's Nat. Arr. v. ii. p. 438.—Macr. Man. Brit. Bot. p. 138.

LOCALITIES.—In waste ground, pastures, and on banks by road-sides.

Biennial.—Flowers from June to September.

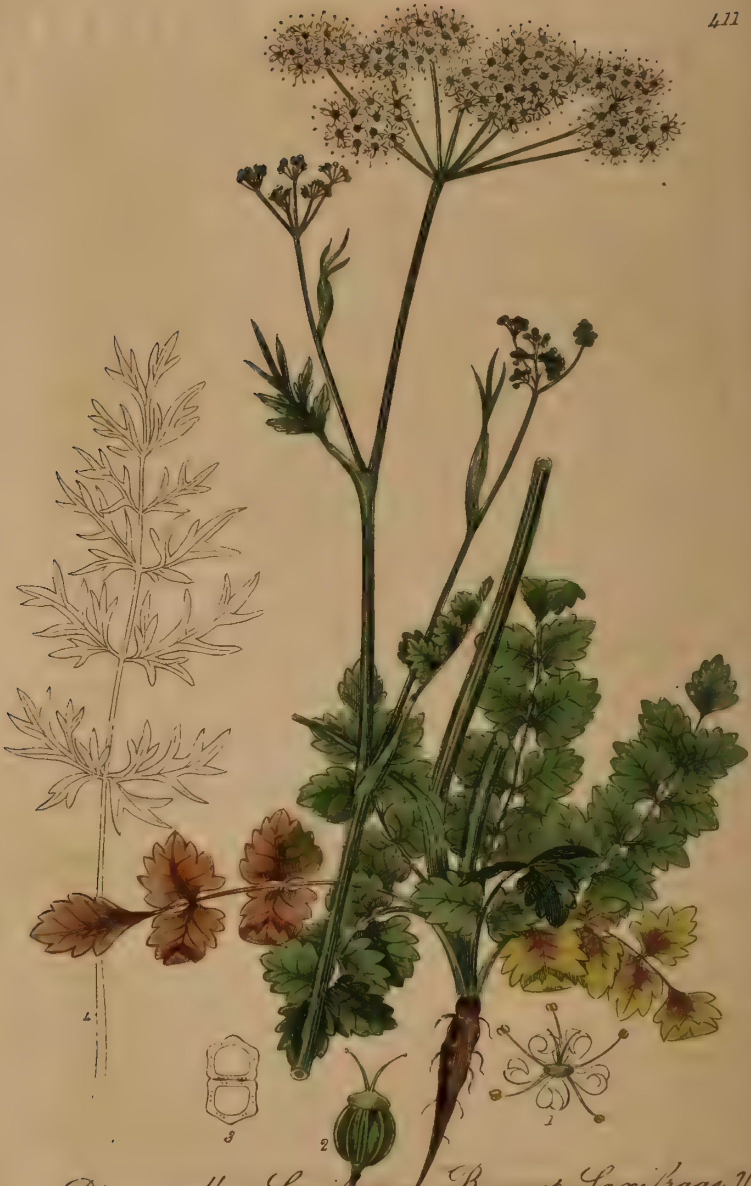
Root branching, fibrous. *Stem* 3 or 4 feet high, upright, stout, solid, branched, angular, furrowed, leafy, hairy or downy, many-flowered, with strong, spiny wings. *Leaves* alternate, sessile and decurrent at the base, long, spear-shaped, spreading; hairy and deep green above, downy and somewhat glaucous underneath; deeply pinnatifid, their lobes spreading alternately, somewhat palmate, armed with stout yellowish spines. *Flowers* large, purple, generally solitary at the summits of the stem and branches. *Involucrum* egg-shaped, its scales spear-shaped, dark green, smooth, strongly keeled, terminating in a rigid, narrow, spreading spine; margins fringed about the middle with cottony down, which gives the involucrum a cobweb-like appearance (see fig. 2.); points of the inner scales upright and more appressed. *Florets* (see fig. 3.) tubular, tube twice the length of the limb, white, very slender; limb purple, dilated, deeply cut into 5, strap-shaped, concave segments, which are thickened and blunt at the apex. *Filaments* free, pubescent; *anthers* bristly at the base. *Seed* inversely egg-shaped, purplish, smooth and polished, obsoletely 4-angled, crowned with a raised margin and conical obtuse appendage. *Pappus* (see figs. 5 and 6.) sessile, feathery. *Receptacle* with long hairs.

Dr. WITHERING observes, that "few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay be thrown up, nothing would grow upon it for several years, did not the seeds of this plant, wafted by the wind, fix and vegetate thereon. Under the shelter of this, other vegetables appear, and the whole soon becomes fertile. The flowers, like those of the Artichoke, have the property of curdling milk. Sheep and swine refuse this plant; and neither horses, cows, nor goats, are fond of it."—The *Papilio Cardui*, and the *Thistle Ermine Moth*, are said to feed upon it. The seeds are the favourite food of many small birds.

It is a large and succulent plant, and is often too well known on strong lands.

Professor MARTYN tells us, that he has seen the air perfectly filled with the seed-down of the *Spear-thistle*, for miles together, on a windy day, flying along, till it was intercepted by a hedge, bank, or rising ground. Where it is seen in such abundance, the greater part of it is generally down without seed; but for this the farmer is obliged to the goldfinch and other small birds; they, however, usually leave enough to stock his grounds with this cumbrous and unwelcome weed, but as it is only biennial, it is readily destroyed by mowing it down before its flowers form seed.

For some account of the beautiful contrivance of Nature for disseminating the seeds of this tribe of plants, see the second page of fols. 163 & 177 of this work.



Pimpinella Saxifraga. Burnet Saxifrage. ♃

Mathews, Del & Sc.

Pub.d by W Baxter Botanic Garden. Oxford 1841

PIMPINE'LLA *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v..iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* (see fig. 1.) all regular and perfect. *Calyx* an obsolete margin. *Corolla* (fig. 1.) of 5, equal, or nearly equal, inversely egg-shaped, emarginate, inflexed petals. *Filaments* (see fig. 1.) hair-like, spreading, longer than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, a little compressed, smooth, finely ribbed. *Styles* (see figs. 1 & 2.) 2, hair-like, somewhat spreading, short in the flower, afterwards as long as the fruit, or longer, tumid, and nearly globular, at the base. *Stigmas* blunt, somewhat capitate. *Floral Receptacle* none. *Fruit* contracted at the side, egg-shaped, crowned with the swollen base of the reflexed styles. *Carpels* (see fig. 3.) with 5, equal, slender ridges, of which the two lateral ones form a margin. *Interstices (channels)* furrowed, with many *vittæ*. *Seeds* convex, flattish in the front. *Involucrum* none. *Flowers* white.

The obsolete *calyx;* the inversely egg-shaped, inflexed *petals;* the egg-shaped *fruit*, crowned with the swollen base of the reflexed *styles;* and the *carpels* with 5 slender, equal ridges, with many *vittæ* in each channel; will distinguish this from other genera, without an involucrum, in the same class and order.

Two species British.

PIMPINE'LLA SAXI'FRAGA. Common Burnet-Saxifrage. Saxifrage Anise.

SPEC. CHAR. Stems slightly striated, pubescent. Leaves pinnate; leaflets of the root-leaves roundish; those of the stem in various strap-shaped segments. Styles shorter than the germen. Fruit egg-shaped.

Engl. Bot. t. 407.—Fl. Dan. t. 669.—Jacq. Fl. Aust. t. 395.—Mart. Fl. Rust. t. 127.—Woodv. Mod. Bot. v. iii. p. 488. t. 179.—Linn. Sp. Pl. p. 378.—Huds. Fl. Angl. (2nd ed.) p. 127.—Willd. Sp. Pl. v. i. pt. II. p. 1471.—Sm. Fl. Brit. v. i. p. 331.; Engl. Fl, v. ii. p. 89.—With. (7th ed.) v. ii. p. 395.—Lindl. Syn. p. 121.—Hook. Brit. Fl. p. 126.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 292.—Macr. Man. Brit. Bot. p. 99.—Lightf. Fl. Scot. v. i. p. 169.—Sibth. Fl. Oxon. p. 102.—Abbot's Fl. Bedf. p. 68.—Thomp. Pl. of Berw. p. 32.—Thornt. Fam. Herb. p. 304, the text only, the figure represents Poterium sanguisorba.—Davies' Welsh Bot. p. 30.—Purt. Midl. Fl. v. i. p. 157.—Relh. Fl. Cant. (3rd ed.) p. 126.—Hook. Fl. Scot. p. 95.—Grev. Fl. Edin. p. 69.—Fl. Devon. pp. 53 & 168.—Johnst. Fl. of

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Fig. 1. A Flower.—Fig. 2. A unripe Fruit.—Fig. 3. Transverse section of a ripe Fruit.—Fig. 4. A Root-leaf of the variety *dissecta.*—Figs. 1, 2. & 3. *magnified.*

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* Altered, as LINNÆUS informs us, from *bipennula*, or twice pinnated, in allusion to the divisions of the leaves.

† See folio 48, note †. ‡ See folio 235, *a*.

Berw. v. i. p. 71.—Winch's Fl. of Northumb. and Durh. p. 20.—Walker's Fl. of Oxf. p. 83.—Lindl. Fl. Med. p. 38.—Bab. Fl. Bath. p. 21. ; Prim. Fl. Sarn. p. 43.—Dick. Fl. Abred. p. 30.—Irv. Lond. Fl. p. 195.—Luxf. Reig. Fl. p. 24.—Cow. Fl. Guide, p. 41.—Leight. Fl. Shropsh. p. 130.—Mack. Catal. Pl. of Irel. p. 30. ; Fl. Hibern. p. 122.—*Pimpinella minor*, Gray's Nat. Arr. v. ii. p. 511.—*Pimpinella saxifraga minor*, Bauh. Pin. p. 160.—Ray's Syn. p. 213.—*Pimpinella saxifraga minor foliis sanguisorbæ*, Ray's Syn. p. 213.—*Bipinella, sive saxifraga minor*, Johnson's Gerarde, p. 1044.

Localities.—In dry pastures, on banks, and on rocks, in a sandy, gravelly, or chalky soil; not uncommon.

Perennial.—Flowers in July and August.

Root spindle-shaped, tough and woody, highly aromatic and pungent, not unpleasant, especially when dry. *Stems* from 1 to 2 feet high, upright, solid, cylindrical, striated, downy, leafy, varying much in luxuriance, usually branched above. *Leaves* on longish petioles, oblong, pinnate, veiny, roughish and rigid ; *leaflets* of the root-leaves roundish egg-shaped, deeply serrated and cut; those of the upper leaves, and sometimes of all, simply or doubly pinnatifid, with acute, spreading, decurrent segments (see fig. 4). *Umbels* terminal, flattish, of many *general* and *partial* smooth rays, drooping when young, without any *involucrum*. *Flowers* white, small, nearly equal. *Stamens* long. *Styles* not quite so long as the germen, their tumid bases reddish. *Fruit* small, egg-shaped, ribbed.

This species is a native throughout the whole of Europe, Tauria, Caucasus, and Persia. The great diversity in its size, and also in the form and divisions of its foliage, has occasioned some authors to make several species of it. The principal varieties found with us are the following :—

α. *Poteriifolia*. Root-leaves pinnate; leaflets egg-shaped, roundish at the base, entire, deeply serrated or cut. See the accompanying plate.

β. *Intermedia*. Root-leaves pinnate; leaflets egg-shaped, deeply and pinnatifidly cut, lobes egg-shaped, deeply serrated.

γ. *Dissecta*. Root-leaves pinnate; leaflets egg-shaped, bipinnatifid, segments intire (fig. 4). P. δ. *Dissecta*. Sibth. Fl. Oxon p. 102. Abbot's Fl. Bedf. p. 68.—Gray's Nat. Arr. v. ii. p. 512.—Lindl. Fl. Med. p. 38.

Dr. Withering remarks, that these varieties are occasioned by the different age of the plant, and the greater or lesser expansion of its foliage according to the soil in which it grows. He suggests, it is probable that the first root-leaves are the same in all, that is, simply winged, the leaflets egg-shaped and serrated; that when these disappear, the lower leaves have wing-cleft, or doubly winged leaves, and the upper leaves become also more compound with the rest. All these varieties may occasionally be found growing together in the same locality.

The root, which is very acrid and astringent, is used as a masticatory to relieve the toothache, and in decoction to remove freckles. It affords a blue essential oil, and communicates that colour to water or spirit on distillation. A species of coccus, from which colouring matter may be procured, infests the roots. The *Papilio Machaon*, or Swallow-tailed Butterfly, one of the largest and most superb of all the British Lepidopteræ, is sometimes found on this plant, on which, and on some other of the umbelliferæ, the caterpiller feeds.

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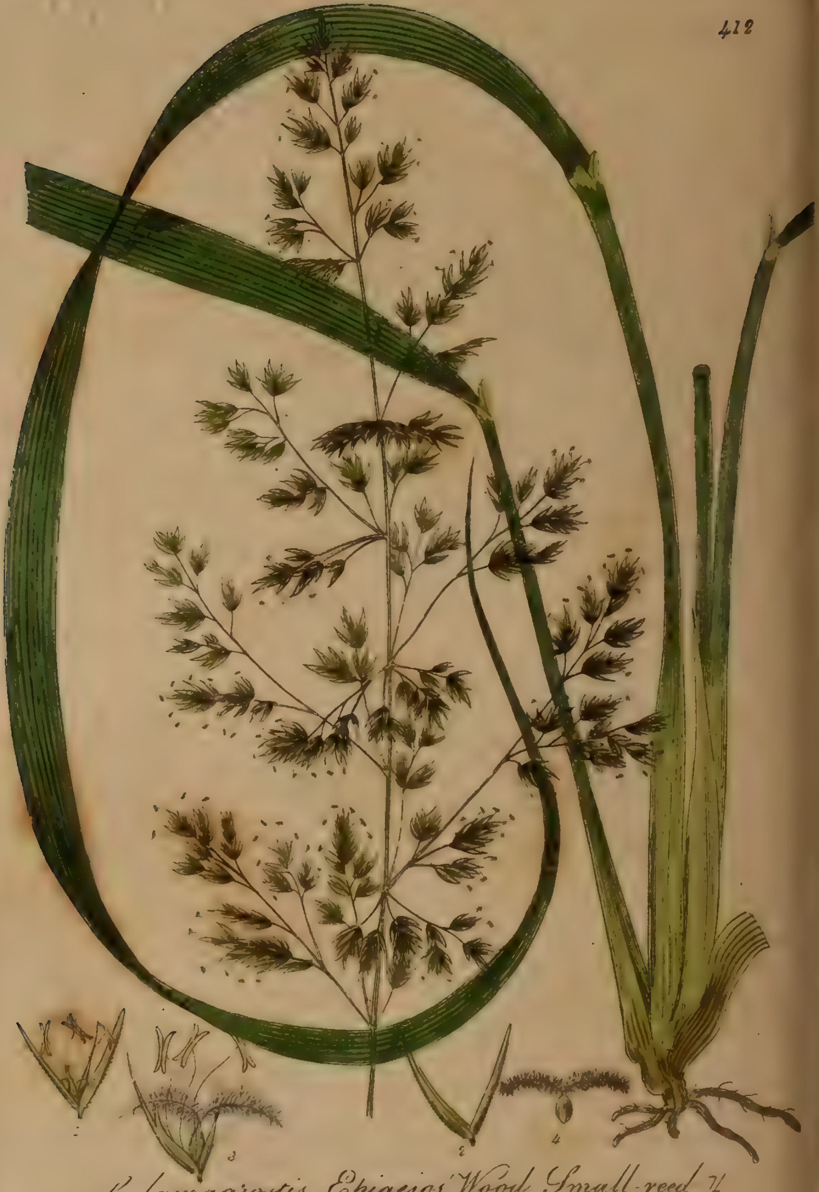

Calamagrostis Epigejos. Wood Small-reed ♃

Mathews Del. & Sc.

Pub.d by W. Baxter Botanic Garden Oxford 1841

CALAMAGRO'STIS*.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.* GRAMINALES; sect. FESTUCINÆ; type, AVENACEÆ; Burn. Outl. of Bot. v. i. pp. 359 & 369.

GEN. CHAR. *Inflorescence* panicled, panicle loose, *Spikelets* (fig. 1.) single-flowered. *Calyx* (fig. 2.) of 2, equal or unequal, spear-shaped, concave, pointed, keeled, compressed glumes, longer than the paleæ. *Corolla* (see fig. 3.) of 2, unequal, membranous, ribbed paleæ, surrounded with hairs at the base; the outer palea largest and awned. *Filaments* (see figs. 1 & 3.) 3, hair-like, about the length of the calyx. *Anthers* cloven at each end. *Germen* (see fig. 4.) oval, or inversely egg-shaped. *Styles* (see fig. 4.) 2, short. *Stigmas* (see figs. 3 & 4.) feathery, closely tufted. *Seed* oblong, pointed at each end.

The loose *panicle;* the single-flowered *spikelets;* the *calyx* of 2 *glumes*, longer than the corolla; and the *corolla* of 2 unequal, membranous *paleæ*, surrounded with hairs at the base, with the outer palea awned; will distinguish this from other genera in the same class and order.

Four species British.

CALAMAGRO'STIS EPIGE'JOS. Creeping Reed-grass. Wood Small-reed. Wood-reed. Bush-grass.

SPEC. CHAR. Panicle upright, close (open in flower). Flowers crowded, unilateral. Glumes awl-shaped, with a rough keel. Outer Palea with a dorsal awn nearly as long as the glumes.

CALAMAGROSTIS EPIGEJOS. *Roth.* Fl. Germ. v. i. p. 34.; and v. ii. p. 91.—Gray's Nat. Arr. v. ii. p. 151.—Lindl. Syn. p. 304.—Hook. Brit. Fl. p. 32.—Macr. Man. Brit. Bot. p. 264.—Sibth. Fl. Oxon. p. 37.—Bab. Fl. Bath. p. 56.—Dick. Fl. Abred. p. 22.—Irv. Lond. Fl. p. 94.—Leight. Fl. of Shropsh. p. 57.—Mack. Fl. Hibern. p. 297.—*Calamagrostis lanceolata*, With. (4th ed.)—*Arundo Epigejos*, Linn. Sp. Pl. p. 120.—Engl. Bot. t. 403.—Knapp. Gram. Brit. t. 97.—Willd. Sp. Pl. v. i. pt. I. p. 456.—Sm. Fl. Brit. v. i. p. 145.; Engl. Fl. v. i. p. 169.—With. (7th ed.) v. ii. p. 197.—Schrad. Fl. Germ. v. i. p. 211. t. 4. f. 1.—Davies' Welsh Bot. p. 12.—Purt. Midl. Fl. v. iii. p. 338.—Relh. Fl. Cant. (3rd ed.) p. 47.—Sincl. Hort. Gram. Woburn. p. 25. f. 21.—Rev. G. E. Smith's Pl. of S. Kent, p. 7.—Walker's Fl. of Oxf. p. 31.—Perry's Pl. Varvic. Selectæ, p. 10.—Murr. Northern Fl. p. 46.—Bab. Prim. Fl. Sarn. p. 107.—*Arundo Calamagrostis*, Huds. Fl. Angl. (2nd ed.) p. 54.—Lightf. Fl. Scot. v. i. p. 106.—Abbot's Fl. Bedf. p. 25.—Hook. Fl. Scot. p. 27.—*Gramen arundinaceum, paniculâ molli, spadiceâ, majus*, Ray's Syn. p. 401.—Bauh. Theatr. p. 94. f. 95.—Scheuchz. Agros. p. 122. t. 3. f. 3. B.—*Gramen paniculatum palustre præaltum exile, paniculâ arundinaceâ*, Ponted. Comp. p. 56.—Herb. Sherard.

Fig. 1. A Flower.—Fig. 2. Calyx or Glumes.—Fig. 3. Corolla or Paleæ, with the Pistil, Stamens, and Hairs.—Fig. 4. Germen, Styles, and Stigmas.

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* From *kalamos*, Gr. one of the *Palms;* and *agrostis*, Gr. a genus of grasses; a barbarous denomination, and only admissible on the ground of its being now generally adopted. Sir W. J. HOOKER.

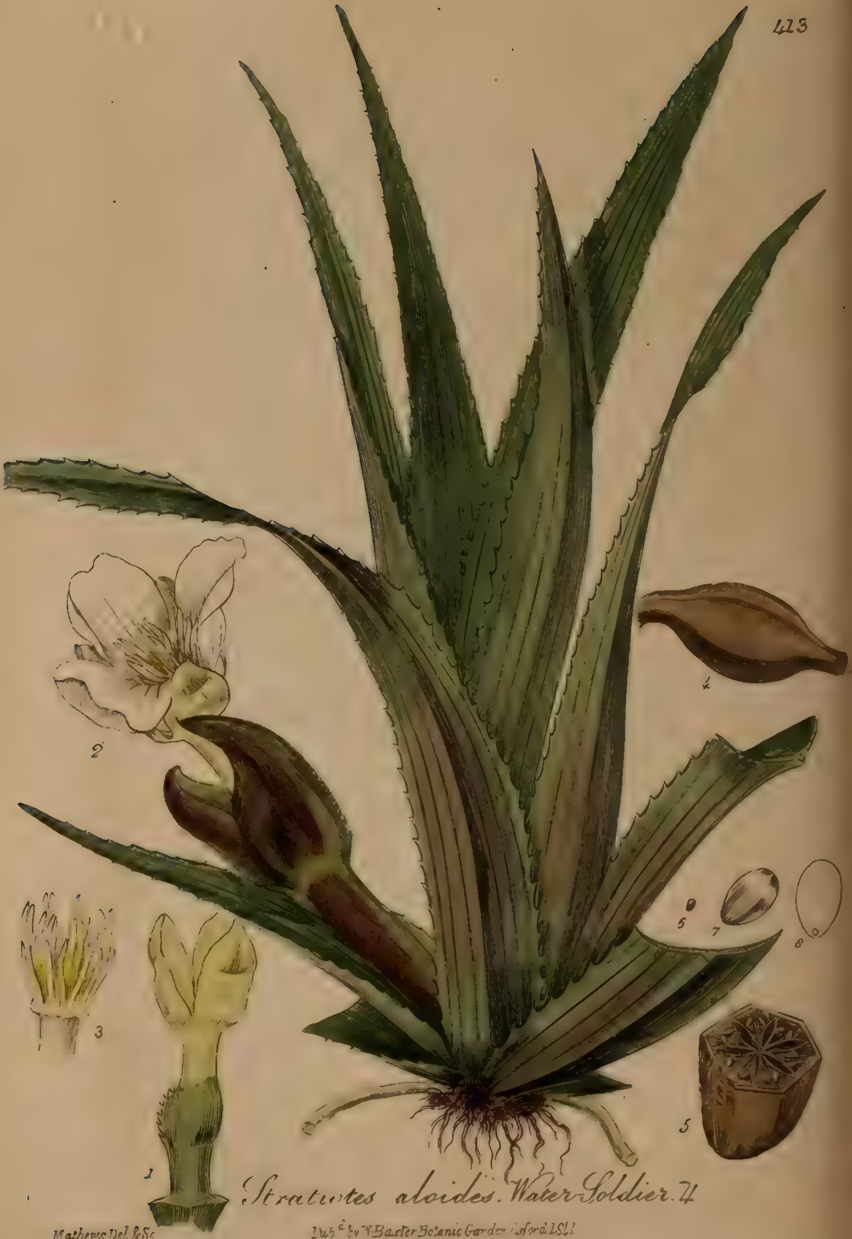
† See fol. 56, note †.

LOCALITIES.—In shady ditches, moist woods, and in hedges.—*Oxfordshire;* Magdalen College Copse; Tar Wood; in a furze field between Bullington-green and Shotover-hill. Copse near Horsepath, by the foot-path.—*Berks;* On the banks of ditches on the north side of Bagley Wood, nearly opposite to South Hinksey; 1827.—*Beds.* Sheerhatch Wood.—*Cambridgesh.* Madingly, Kingston, and Eversden Woods; Comberton; Wood Ditton; Isle of Ely; Plantations by Fulbourn Moor; Teversham Moor; Hill near Linton, by the back road from Hildersham.—*Cumberland;* Dunmallet, by the front avenue, rare.—*Dorset;* Wet ditches about Weymouth, and in Purbeck; in several places in the Vale of Blackmoor.—*Durham;* At the foot of the N. branch of Castle Eden Dean, and by the Tyne above Hebburn Quay.—*Essex;* Epping Forest; near Salter's Buildings, Walthamstow; borders of the wood called the Larks, near Chingford.—*Kent;* In the wood, west of the Cherry Garden. In a wood near the High Rocks, towards the Wells.—*Leicestersh.* Martinshaw Wood, near Grooby; Cloud Wood; abundant in the Park at Bosworth; also in Sutton Ambien Wood, the site of Bosworth Field.—*Lincolnsh.* Moist woods, not unfrequent; near Gainsborough, in every ditch.—*Middlesex;* Between Hornsey and Newington; in the old Park Wood at Harefield, and in the lane leading from Harefield to Rickmansworth, plentifully.—*Norfolk;* In Hethel and Arminghall Woods, near Norwich; Earsham Wood.—*Northumberland;* On the banks of N. Tyne near Warden Mill; in woods near Gilsland Wells; and in a moss near the Routing Linn, in the vicinity of Doddington.—*Notts.* Between Bulwell and Nuthall.—*Shropsh.* Side of a ditch on the borders of Aqualate Mere; and near Battlefield Church.—*Somersetsh.* In a hedge by the road-side between the Monument and Tracy Park.—*Suffolk;* Bungay.—*Sussex;* Wet thickets, rather rare.—*Warwicksh.* Dunnington; Salford; and Wetheley; in woods near Alcester; and near Allesley.—*Worcestersh.* East side of Perry Wood.—*Yorksh.* Leeds; Copgrove; in woods at Castle Howard, but very rare; in a little wood at Fawdington, near Helperby; Boroughbridge; ditch near Monckton common field by Ripon; common near Thirsk.—WALES. *Anglesey;* Above the beach between Friars and Lleiniog; Lligwy Wood, &c.—SCOTLAND. *Aberdeensh.* In Braemar, several miles below Invercauld, on the south side of the river, among wood; and on a steep bank on the north side of the Dee, a little below Manse of Drumoak.—*Argylesh.* Mac Lean of Coll's Woods, near Tobermory.—*Ayrsh.* Dalrymple Wood, Ayr.—IRELAND. *County of Derry*; Formoyle-hill, parish of Dunboe.

Perennial.—Flowers in July.

Root creeping. *Culm (stem)* from 3 to 5 feet high, upright, cylindrical, jointed, hollow, striated, furrows slightly pubescent. *Leaves* strap-spear-shaped, with a sharp, taper point, roughish, a little glaucous underneath. *Sheaths* very large, clasping, striated, scarcely rough, except the upper one. *Stipula (ligula)* spear-shaped, pointed, thin, soon torn. *Panicle* from 6 to 11 inches long, upright, purplish, its branches rough; spreading when in flower, close afterwards. *Flowers* (fig. 1.) numerous, directed to one side. *Glumes* (fig. 2.) nearly equal, long and narrow, purplish, rough at the keel. *Outer Palea* (see fig. 3.) about half as long as the glumes, membranous, flat, with 2 rough marginal ribs at each side, bifid and rough at the point, with a dorsal *awn* about as long as the glumes; *inner palea* much smaller, slightly bifid and rough. *Hairs* (see figs. 1 & 3.) as long as the glumes.

A handsome Grass, but of little or no interest to the Agriculturist.



Stratiotes aloides. Water-Soldier. ♃

Mathews Del. & Sc.

Pub^d by W. Baxter Botanic Garden Oxford 1841

STRATIO'TES*.

Linnean Class and Order. POLYA'NDRIA, HEXAGY'NIA.

Natural Order. HYDROCHARI'DEÆ, *Dec.* Fl. Fr. v. iii. p. 265.—Lindl. Syn. p. 254.; Introd. to Nat. Syst. of Bot. p. 254.—Rich. by Macgilliv. p. 414.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 272.—Hook. Brit. Fl. (4th ed.) p. 425.—HYDROCHARIDES, Juss. Gen. Pl. p. 67.—Sm. Gram. of Bot. p. 84.—MUSALES; sect. HYDROCHARINÆ; type, STRATIOTACEÆ; Burn. Outl. of Bot. v. i. pp. 437, 464, & 465.—PALMÆ, *Linn.*

GEN. CHAR. *Spatha* compressed, of 2 leaves; 1-flowered, permanent *Calyx* (see fig. 1.) superior, tubular, upright, of 1 sepal, in 3 deep, deciduous segments. *Corolla* (see fig. 2.) of 3, inversely egg-shaped, concave, slightly spreading petals, which are alternate with the segments of the calyx, and twice as long. *Filaments* (see fig. 3.) about 20, inserted into the apex of the tube of the calyx, and shorter than its segments. *Anthers* vertical, awl-shaped. *Germen* (see fig. 1.) inferior, elliptical, bluntly triangular. *Styles* (see fig. 3.) 6, deeply cloven, as long as the stamens. *Stigmas* simple. *Fruit* (see figs. 4 & 5.) inferior, fleshy, taper-pointed, 6-cornered, 6-celled, and many-seeded. *Seeds* (see figs. 5 to 8.) numerous, inversely egg-shaped, attached to the dissepiments.

The 2-leaved *spatha;* the 3-cleft *calyx;* the *corolla* of 3 petals; and the inferior, angular, 6-celled, many-seeded, fleshy *fruit;* will distinguish this from other genera in the same class and order.

One species British.

STRATIO'TES ALOI'DES. Aloe-like Water-soldier. Fresh-water Soldier. Water Aloe. Water Sengreen.

SPEC. CHAR. Leaves sword-shaped, channelled, with a prominent rib, and sharp marginal prickles.

Engl. Bot. t. 379.—Fl. Dan. t. 337.—Linn. Sp. Pl. p. 754.—Huds. Fl. Angl. (2nd ed.) p. 236.—Willd. Sp. Pl. v. iv. pt. II. p. 820.—Sm. Fl. Brit. v. ii. p. 579.; Engl. Fl. v. iii. p. 34.—With. (7th ed.) v. iii. p. 668.—Gray's Nat. Arr. v. ii. p. 220.—Lindl. Syn. p. 254.—Hook. Brit. Fl. p. 262.—Macr. Man. Brit. Bot. p. 221.—Relh. Fl. Cant. (3rd ed.) p. 218.—Hook. Fl. Scot. p. 171.—Grev. Fl. Edin. p. 122.—Winch's Fl. of Northumb. and Durh. p. 37.—Pampl. Pl. of Battersea and Clapham, p. 10.—Walker's Fl. of Oxf. pp. 152 & 306.—Irv. Lond. Fl p. 109.—Leight, Fl. of Shropshire, p. 254.—Mack. Catal. Pl. of Irel. p. 52.; Fl. Hibern. p. 272.—*Stratiotes foliis Aloes, semine longo*, Ray's Syn. p. 290.—*Stratiotes sive Militaris aizoides*, Park. Theat. p. 1249. f. 1.—*Militaris aizoides*, Johns. Gerarde, p. 825.—*Aloe sive aizoon palustre*, Bauh. Hist. v. iii. p. 778.

LOCALITIES.—In slow streams, deep fen ditches, and pools; rare.—*Oxfordsh.* About ten years ago I planted three plants of *Stratiotes* in the pond at the E. corner of Magdalen Meadow, and it is now become naturalized there in such abundance, as to have become a troublesome weed: W. B. 1841.—*Berks;* Plentiful in watery ditches by the side of the towing-path near the Cottages in Nuneham Park, but on the Berkshire side of the river, where it was first pointed out to me by Mr. E. B. HEWLETT. I think I remember to have heard, some

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Fig. 1. Germen and Calyx.—Fig. 2. A Flower.—Fig. 3. Stamens.—Fig. 4. Fruit.—Fig. 5. Transverse section of ditto.—Fig. 6. A Seed.—Fig. 7. Ditto.—Fig. 8. Section of the same, showing the embryo.—Figs. 7 & 8 *magnified.*

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* From *stratos*, Gr. an *army;* on account of its numerous sword-like leaves.

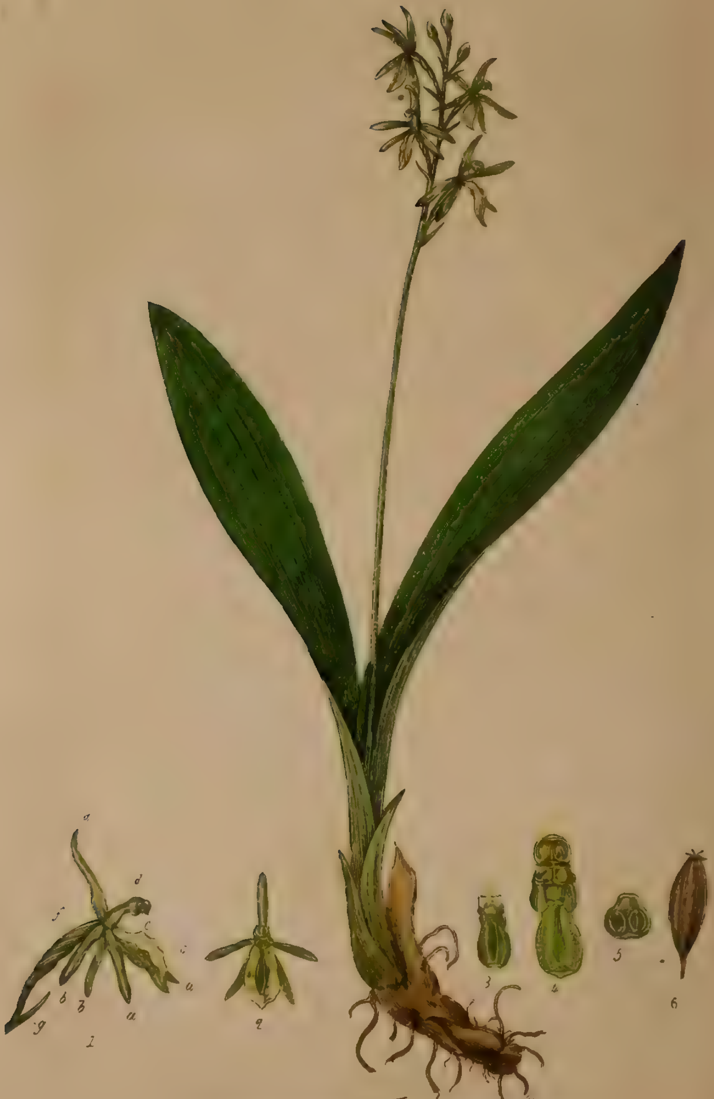
† See folio 51, note †.

years ago, that Mr. Bicheno had observed it in the same neighbourhood.—*Cambridgesh.* Near the bridge at Ely; Stretham Ferry; Rampton; Audrey Causeway; Mepole; beyond Littleport; March; &c.: Rev R. Relhan.—*Cheshire;* In ponds about four miles from Holme's Chapel: Mr. Hunter. In several ponds near Gorton, four miles from Stockport: Mr. G. Holme.—*Lincolnshire;* In the fen ditches, and those in the marsh behind the sea bank, where the water is deep and the current slow: Sir Joseph Banks. Near the new bridge at Gainsborough: Sir T. G. Cullum.—*Norfolk;* About Bungay, and various other places in Norfolk: Mr. Woodward. Near Lynn: Mr. E. Foster, jun. Ditches by the side of Acle Dam, plentifully: Mr. Wigg. Ditch on the side of Haddisco Dam, by the Turnpike Gate; and in vast abundance on Hoveton Common: D. Turner, Esq. Lynn Regis; 1826: G. Howitt, in N. B. G. Abundant in the peat-holes, Royden Fen: Rev. A. Bloxam.—*Northamptonsh.* In the fen ditches: Morton.—*Northumberland;* Naturalized in the ponds at Wallington and north of Cambo; ponds at Nether Witton; brought from the S. of England: N. J. Winch, Esq.—*Notts;* Clay-pits, in Stoke Park, near Newton, (Ordoyno); in the moat at Strelley: Dr. Howitt, in N. B. G.—*Shropsh.* Lilleshall Pond: Miss Mc. Ghie.—*Suffolk:* Lowdham Hall Mere: Crabbe. Ditches near Bungay and Worlingham: Mr. Woodward. At Bradwell and elsewhere about Yarmouth; on Haddisco Dam, close by the turnpike Gate: Mr. Wigg.—*Surrey;* In the pond opposite the Three Houses, Wandsworth Common; and in the wide brook at the foot of Lavender Hill. It was first introduced to this neighbourhood by Mr. W. Anderson, of the Chelsea Garden, and has now become completely naturalized: Mr. W. Pamplin, jun.—*Yorksh.* Near Beverley: Colonel Machell. In the Gyme near Thorn: Mr. Robson.—SCOTLAND. *Edinburghsh.* Duddingston Loch: Mr. H. C. Watson, in N. B. G.—*Forforsh.* Forfar Loch, introduced by Mr. Don.—*Perthsh.* Loch of Clunie: Rev. Mr. Mc. Ritchie. Blair Athol, (Boué): N. J. Winch, Esq.—IRELAND. Near Crum-castle and Castle Saunderson on the banks of Loch Erne; also on the banks of the Shannon, near Portumna; Belfast Water-course: Mr. Templeton.

Perennial.—Flowers in July.

Root fibrous. *Stem* none. *Leaves* all radical, triangular, sword-shaped, from 6 to 9 inches long, sharply toothed at the margin; forming star-like tufts, as in the Aloes. *Scape (flower-stalk)* solitary, firm, stout, two-edged, shorter than the leaves, single-flowered. *Flowers* white, large and handsome, from a compressed 2-leaved *spatha. Stamens* short; *anthers* awl-shaped, with rough globose *pollen. Fruit* somewhat egg-shaped, beaked, drooping, fleshy; cells with a double membrane, very thin, separating lengthwise, full of crystalline pulp. *Seeds* from 10 to 12 in each cell, egg-shaped, somewhat angular, of a pale, brownish red, nestling in the pulp, and fastened to the rind of the fruit, near the external angles of the cells. Gærtner says, the pulp in its natural state is clear, like the vitreous humour of the eye; in spirits of wine it becomes opaque and white, like the white of an egg when boiled; plunged into water it becomes clear again.

This singular plant, which is a native of Siberia as well as of Europe, is a stoloniferous aquatic, and remains submerged during the Autumn and Winter months; but, as Spring advances, it puts forth, from amongst its leaves, numerous thick runners, each of which bears at its extremity a *gemma*, or young plant, which rises to the surface of the water, where it grows to maturity, and where it floats till after its season of flowering, when it sinks to the bottom of the water, and becomes, in its turn, the parent of another race of young offsets; in this manner it frequently so entirely fills up ditches and ponds as to exclude all other herbage. The *anthers* are occasionally imperfect in one flower, the *stigmas* in another, whence some have thought the flowers diœcious, but Sir J. E. Smith observes, that such casual imperfection in those parts is frequent in plants that increase much by root. A great variety of insects are nourished by this plant; some of them pursue it down to the bottom of the water, and devour the leaves. Swine eat it, goats refuse it.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Liparis Loeselii. Two-leaved Liparis. ♃

Mathews, Del. & Sc.

Pub^d by W. Baxter Botanic Garden Oxford 1841

LI'PARIS *.

Linnean Class and Order. GYNA'NDRIA †, MONA'NDRIA.

Natural Order. ORCHI'DEÆ, *Linn.*—Juss. Gen. Pl. p. 64.—Sm. Gram. of Bot. p. 81.; Engl. Fl. v. iv. p. 3.—Lindl. Syn. p. 256; Introd. to Nat. Syst. of Bot. p. 262.—Rich. by Macgilliv. p. 412.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 274.—Macr. Man. Brit. Bot. p. 224.—Hook. Brit. Fl. (4th ed.) p. 425.—PALMARES; order, MUSALES; sect. ORCHIDINÆ; type, ORCHIDACEÆ; Burn. Outl. of Bot. v. i. pp. 391, 437, 458, & 461.

GEN. CHAR. *Perianthium* ‡ *(calyx and corolla)* (figs. 1 & 2.) superior; *sepals* (fig. 1. *a*, *a*, *a*,) 3, more or less herbaceous, strap-shaped, spreading. *Petals* (fig. 1. *b*, *b*,) strap-shaped, spreading. *Lip* (fig. 1. *c*.) undermost, dilated, undivided, without a spur, much larger than the sepals. *Anther* (see fig. 1. *e*, and fig 4.) terminal, deciduous. *Pollen-masses* (see fig. 4.) in 2 pairs, waxy. *Germen* (fig. 1. *f*.) inversely egg-shaped, angular. *Style (column)* (see fig. 1. *d*.) nearly as long as the sepals. *Stigma* close beneath the anther in front. *Capsule* (fig. 6.) elliptic-oblong, with 3 or 6 ribs. *Seeds* numerous, minute, each with a lax chaffy *tunic*.

The strap-shaped, spreading *sepals* and *petals;* the inferior, spurless, undivided *lip*, much larger than the sepals; the elongated *column;* and the 2 pairs of waxy *pollen-masses;* will distinguish this from other genera, with a terminal deciduous anther, in the same class and order.

One species British.

LI'PARIS LŒSE'LII. Lœsel's Liparis. Two-leaved Liparis. Bulbous Twayblade. Dwarf-Orchis. Two-leaved Bog-Orchis.

SPEC. CHAR. Leaves 2, broadly spear-shaped. Stalk triangular. Lip entire, longer than the perianthium.

LIPARIS LŒSELII, Rich. in Mem. Mus. v. iv. p. 60.—Hook. Brit. Fl. p. 380.—Lindl. Syn. p. 263.—Macr. Man. Brit. Bot. p. 229.—*Malaxis Lœselii*, Sw. Orch. p. 71.—Willd. Sp. Pl. v. iv. pt. I. p. 92.—Sm. Engl. Fl. v. iv. p. 48.—*Cymbidium Lœselii*, Sw. in Nov. Act. Ups. v. vi. p. 76.—*Ophrys Lœselii*, Linn. Sp. Pl. p. 1341.; Fl. Succ. (2nd ed.) p. 316.—Engl. Bot. t. 47.—Sm. Fl. Brit. v. iii. p. 935.—With. (7th ed.) v. ii. p. 40.—Relh. Fl. Cant. (3rd ed.) p. 363.—*Ophrys lilifolia*, Huds. Fl. Angl. (3nd ed.) p. 389.—*Ophrys paludosa*, Fl. Dan. t. 877.—*Ophris diphyllos bulbosa*, Lœs. Pruss. p. 180, t. 58.—*Ophris bifolia bulbosa*, Johnson's Gerarde, p. 403.—Bauh. Pin. p. 87.—*Chamæorchis lilifolia*, Bauh. Pin. 84.—*Chamæorchis latifolia Zelandica*, Park. Theat. Bot. p. 1354.—*Pseudorchis Lœselii*, Gray's Nat. Arr. v. ii. p. 213.—*Pseudo-orchis bifolia palustris*, Ray's Syn. p. 382.—*Orchis lilifolius minor sabuletorum Zelandiæ et Bataviæ*, Bauh. Hist. v. ii. p. 770. f. 1 and 2.; not 3, which is *Goodyera repens* §.—Ray's Cant. p. 105.

Fig. 1. A separate Flower; *a*, *a*, *a*. sepals; *b*, *b*. petals; *c*. lip; *d*. column; *e*. anther; *f*. germen; *g*. bractea.—Fig. 2. Front view of a Flower.—Fig. 3. Front view of a column of an expanded Flower.—Fig. 4. The same column with the anther turned back, showing the stigmatic cavity and pollen-masses.—Fig. 5. View of the face of the anther without its pollen.—Fig. 6. A Capsule.—*All*, except fig. 6. *magnified.*—The dissections, with the exception of fig. 6, are all copied, and reduced, from Professor LINDLEY'S beautiful work, entitled, "Illustrations of Orchidaceous Plants."—The plates from drawings, by the late Mr. FRANCIS BAUER.

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* From *liparos*, Gr. *fat;* or unctuous to the touch.

† See folio 8, note †.

‡ See folio 33, note ‡.

§ See folio 309.

Localities.—On sandy bogs, among rushes; very rare.—*Cambridgeshire ;* Teversham; Fulbourn; and Sawston Moors: Rev. R. Relhan. Hinton Moor: Dr. Withering. Burwell Fen: C. C. Babington, Esq. in N. B. G.—*Kent ;* Boggy ground about Ham Ponds, near Eastry: L. W. Dillwyn, Esq.—*Norfolk ;* St. Faith's Newton Bogs, near Norwich: Mr. Pitchford. Roydon Fen, near Diss: Mr. Woodward.—*Suffolk ;* Bogs near Tuddenham: Sir T. G, Cullum.

Perennial.—Flowers in July.

Root somewhat bulbous, bulb solid, greenish, covered with soft pale scales, increasing by one or more lateral offsets from the base, and sending down, from the same part, many simple, wavy radicles. *Leaves* 2, of equal size, spear-shaped, strap-spear-shaped, or sometimes inversely egg-shaped, quite entire, smooth, bright green, with one central rib and many small ones; their bases elongated and sheathing. *Scape (stalk)* from between the leaves, from 3 to 8 inches high, triangular, smooth, naked. *Flowers* from 3 or 4 to 8, seldom more, in a kind of raceme, each with a small spear-shaped bractea at its base (see fig. 1. *g*). *Sepals* (see fig. 1. *a*, *a*, *a*.) spreading, spear-shaped, bluntish, of a pale lemon-colour. *Petals* (fig. 1. *b*, *b*.) strap-shaped, rather longer and narrower than the sepals, likewise spreading, and of nearly the same hue. *Lip (nectary)* (fig. 1. *c*.) of a deeper yellow, rather longer than the petals, inversely egg-shaped, folded, or channelled, wavy, or slightly crenate. *Germen* (fig. 1. *f*.) inversely egg-shaped. *Capsule* (fig. 6.) upright, elliptic-oblong, angular, many-seeded. *Seeds* numerous, very small.

As well as of England, this curious plant is also a native of Denmark, Sweden, and Prussia. It is one of the very rarest of our native *Orchideæ*, having never been found either in Wales, Scotland, or Ireland; and even in England, according to Withering, the Norfolk and Suffolk stations given for it, are very doubtful.

The drawing for the accompanying plate was made from a specimen preserved in the *Sherardian Herbarium*, but whether of British or Foreign growth, is not specified. Sir W. J. Hooker observes, that the flowers of this species are, in their general structure, very similar to those of the tropical and parasitical *Liparis foliosa*, figured in the Botanical Magazine, t. 2709.

THE WILD FLOWER.

"Sweet wilding tufts that 'mid the waste
Your lovely buds expand;
Though by no sheltering walls embraced,
Nor trained by beauty's hand;

The primal flowers which grace your stems
Bright as the dahlia's shine,
Found thus, like unexpected gems,
To lonely hearts like mine.

'Tis a quaint thought, and yet perchance,
Sweet blossoms ye are sprung
From flowers that over Eden once
Their pristine fragrance flung;

That drank the dews of Paradise,
Beneath the starlight clear;
Or caught from Eve's dejected eyes
Her first repentant tear."

Chambers' Edinburgh Journal.

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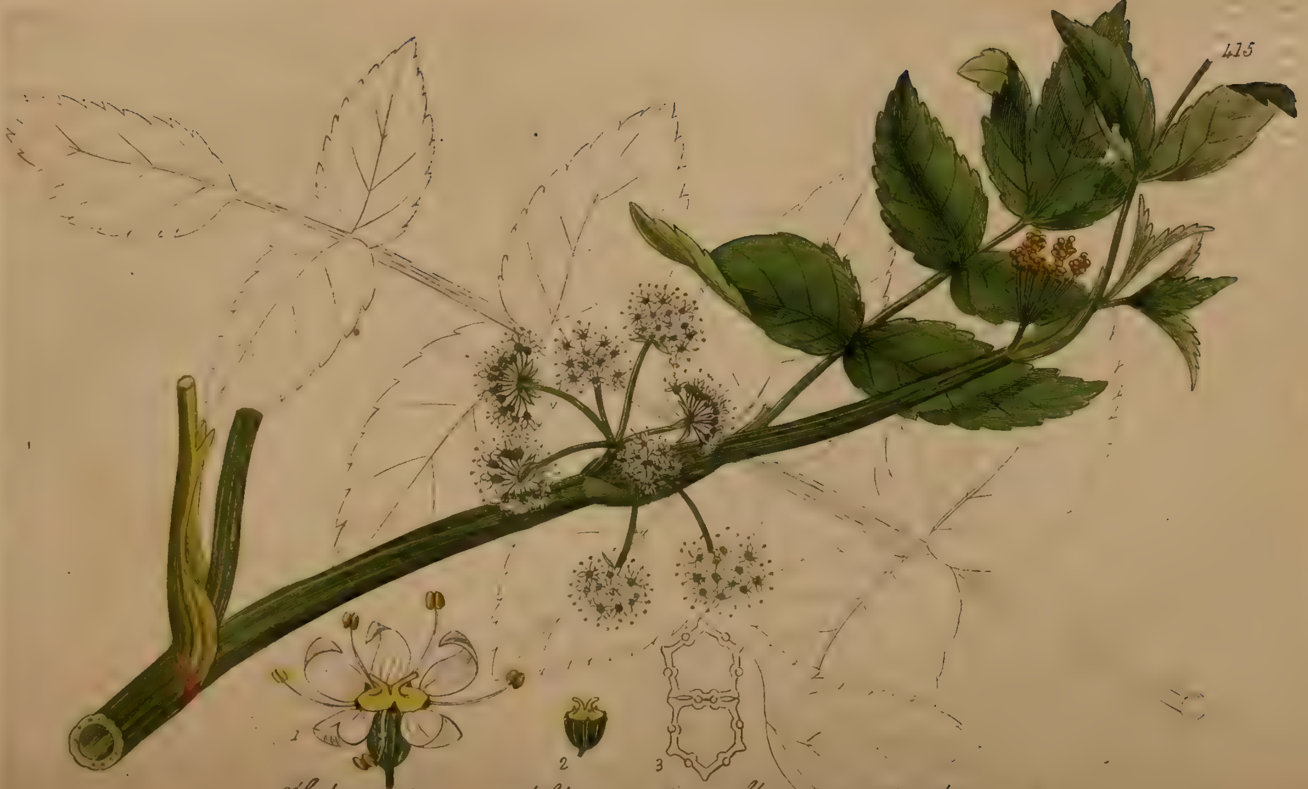

Helosciadium nodiflorum joint-flowering marsh-wort. ♃

Mathews, Del. & Sc.

Pub^d by W. Baxter, Botanic Garden, Oxford, 181

HELOSCIA'DIUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. Flowers all uniform, and generally perfect. *Calyx* (see fig. 2.) a 5-toothed margin, often obsolete. *Corolla* (see fig. 1.) of 5, equal, egg-shaped, entire petals, with more or less of an inflexed point. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, longer than the corolla. *Anthers* roundish. *Germen* (fig. 2.) inferior, roundish-egg-shaped, striated. *Styles* (see figs. 1 & 2.) 2, cylindrical, more or less spreading, moderately swelling at the base, short, permanent. *Stigmas* blunt. *Fruit* smooth, compressed from the sides, egg-shaped, or oblong. *Carpels* with 5, slender, prominent, equal *ridges*, of which the two lateral ones form a margin. *Interstices (channels)* with one *vitta* each (see fig. 3). *Seed* more or less convex, flattish in front. *Involucrums* various. *Flowers* white.

The *calyx* of 5 small teeth, or obsolete; the egg-shaped, entire *petals*, with a straight or inflexed point; the egg-shaped or oblong, compressed, smooth *fruit;* and the *carpels* with 5, slender, prominent, equal ridges, with one *vitta* in each *channel;* will distinguish this from other genera in the same class and order.

Three species British.

HELOSCIA'DIUM NODIFLO'RUM. Knot-flowered Marshwort. Procumbent Water-Parsnep. Water-Skerret. Fool's Water-Cress.

SPEC. CHAR. Stem rooting, procumbent. Leaves pinnate; leaflets egg-shaped, equally serrated. Umbels opposite the leaves, sessile or on short peduncles.

HELOSCIADIUM NODIFLORUM, Koch. Umb. p. 126.—Lindl. Syn. p. 122.—Hook. Brit. Fl. (4th ed.) p. 112.—Macr. Man. Brit. Bot. p. 98.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 281.—Bab. Fl. Bath. p. 21.; Prim. Fl. Sarn. p. 42.—Luxf. Reig. Fl. p. 24.—Cow. Fl. Guide, p. 48.—Leight. Fl. of Shropsh. p. 131.—*Sium nodiflorum*, Linn. Sp. Pl. p. 361.—Engl. Bot. t. 639.—Woodv. Med. Bot. v. iii. p. 494. t. 182.—Huds. Fl. Angl. (2nd ed.) p. 119.—Willd. Sp. Pl. v. i. pt. II. p. 1432.—Sm. Fl. Brit. v. i. p. 313.; Engl. Fl. v. ii. p. 57.—With. (7th ed.) v. ii. p. 379.—Gray's Nat. Arr. v. ii. p. 505.—Hook. Brit. Fl. p. 125.—Lightf. Fl. Scot. v. i. p. 161.—Sibth. Fl. Oxon. p. 96.—Abbot's Fl. Bedf. p. 62.—Thornt. Fam. Herb. p. 296, with a figure.—Davies' Welsh Bot. p. 28.—Purt. Midl. Fl. v. i. p. 143.—Relh. Fl. Cant. (3rd ed.) p. 118.—Hook. Fl. Scot. p. 90.—Grev. Fl. Edin. p. 65.—Fl. Devon. pp. 50 & 166.—Johnst. Fl. of Berw. v. i. p. 69.—Hook. Bot. Miscell. v. ii. p. 409.—Winch's Fl. of Northumb. and Durh. p. 18.—Walker's Fl.

Fig. 1. A Flower.—Fig. 2. Germen and Pistils.—Fig. 3. Transverse section of the Fruit.—*All, more or less, magnified.*

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* From *elos*, Gr. a *marsh;* and *skiadion*, Gr. *an umbel;* in allusion to the place of their growth.

† See folio 48, note †.

‡ See folio 235, *a*.

of Oxf. p. 78.—Irv. Lond. Fl. p. 195.—Mack. Catal. Pl. of Irel. p. 38.—Fl. Hibern. p. 121.—*Sium umbellatum repens*, Johns. Gerarde, pp. 256 & 258. n. 3.; excluding the reference to Delech. Hist. Lugd. 1092.—Ray's Syn. p. 211.

LOCALITIES.—In ditches and rivulets; frequent.

Perennial.—Flowers in July and August.

Root creeping. *Stems* procumbent, or floating, occasionally creeping, various in length, rooting at the joints, stout, angular, furrowed, smooth, leafy, hollow; with numerous widely spreading branches. *Leaves* alternate, distant, pinnate, smooth, each of from 2 to 4 pair of sessile, egg-shaped leaflets, with an odd one, all equally serrated; the terminal one largest, and sometimes confluent with the next pair below it. *Petioles (leaf-stalks)* dilated at the base with a broad membranous border. *Umbels* opposite to the leaves, often nearly sessile, but generally on peduncles varying in length, but never equalling the umbels. *Involucrums* dilated and membranous at the edges; *general one* of a single leaf, or mostly wanting; *partial one* of several, egg-shaped, pointed, concave leaves, white with green ribs. *Flowers* small. *Calyx* very short. *Petals* white, egg-shaped, entire, slightly inflexed. *Styles* somewhat incurved. *Fruit* roundish egg-shaped, short, smooth, with 3 dorsal, prominent ribs, and 2 remote lateral ones, to each *carpel* (see fig. 3).

The juice of this plant is recommended in cutaneous disorders. Three large spoonfuls are given, mixed with milk, twice a day. SMITH.—The leaves greatly resemble those of the true Water-cress, (t. 271.) for which they have been sometimes mistaken, but they may readily be distinguished by the dilated sheathing base of the leaf-stalk, which is not sheathing in the Water-cress.

The Green Polype, *Hydra viridis* of LINNÆUS, figured in Shaw's Naturalist's Miscellany, v. i. t. 20., is often to be found on the stems and leaves of this plant, under water. This extraordinary little aquatic animal was first shown to me, many years ago, by the late Mr. JAMES BENWELL*.

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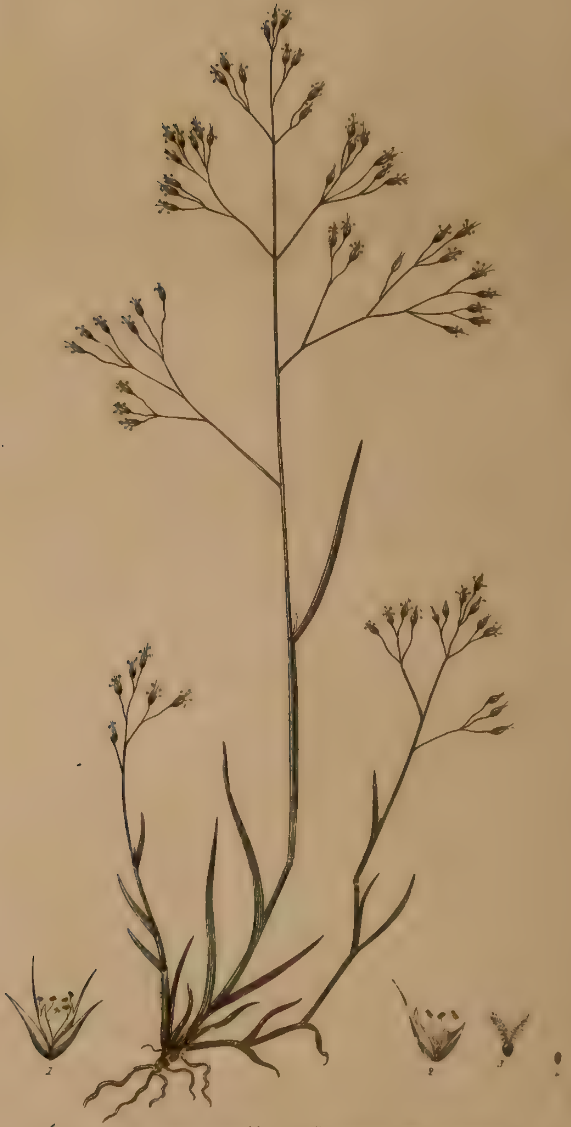
* Mr. JAMES BENWELL was, for more than forty years, employed in the Oxford Botanic Garden. He was, although uneducated, a very intelligent man, and his accurate knowledge of British Plants, and of their localities in the vicinity of Oxford, and a singular talent for observation in every branch of Natural History, rendered his services highly valuable. He attended the late Dr. JOHN SIBTHORP, Professor of Botany, in his botanical excursions in Oxfordshire, when collecting materials for his "Flora Oxoniensis," published in 1794, and was the first who discovered the station for *Paris quadrifolia*, and one or two other rare plants, in the county. His integrity, and industry, and a natural propriety, and civility of manners, gained him the respect and esteem of all who knew him. He died on the 7th of October, 1819, aged 84 years. A print of him, a very striking and characteristic likeness, engraved by Mr. SKELTON, of Oxford, from a drawing by that excellent artist, Mr. A. R. BURT, was published about two years before his death. I shall always remember, with the most sincere gratitude and respect, the kind and disinterested assistance I received from this honest and kind-hearted man; and from another highly valued and lamented friend, the late Mr. JOHN MADDOX, when I first turned my attention to the study of British Botany. Mr. MADDOX was, for many years, gardener at Christ Church; he was an excellent practical gardener, a great advocate for the LINNÆAN System of Botany, and a remarkably well informed man; he possessed, indeed, such a general knowledge of the natural sciences as is rarely to be met with amongst men in his station of life. He died on the 8th of April, 1828, in the 80th year of his age. It is remarkable, that himself and his wife died within a day or two of each other, and were both buried on the same day, in one grave, in the church-yard of St. Aldate's, Oxford.—W. B. February 27, 1841.



Aira caryophyllea. Silvery Hair-graſs. ©

Mathews, Del. & Sc.

Pub^d by W. Baxter, Botanic Garden, Oxford 18[illegible]

AI'RA*.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. to Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. of Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.* GRAMINALES; Burn. Outl. of Bot. v. i. p. 359.

GEN. CHAR. *Inflorescence* panicled; *Panicle* loose. *Spikelets* (see fig. 1.) 2-flowered. *Calyx* (see fig. 1.) of 2, nearly equal glumes. *Corolla* (fig. 2.) of 2, unequal, membranaceous and thin paleæ, the outer palea largest, with a dorsal, slightly-twisted or straight awn, proceeding from above the base; inner palea notched at the point, awnless. *Nectary* of 2, entire, smooth scales. *Filaments* (see figs. 1 & 2.) 3, hair-like. *Anthers* prominent, pendulous, notched at each end. *Germen* (see fig. 3.) egg-shaped. *Styles* short, distinct. *Stigmas* (see fig. 3.) feathery, large. *Seed* (fig. 4.) egg-shaped, loose, covered with the membranous corolla.

The loose *panicle;* the 2-flowered *spikelets*, with a *calyx* of 2 nearly equal glumes; the *corolla* with its lower palea awned near the base; and the loose *seed;* will distinguish this from other genera in the same class and order.

Six species British.

AI'RA CARYOPHY'LLEA. Clove Hair-grass. Silver Hair-grass.

SPEC. CHAR. Panicle spreading, triple-forked. Florets scarcely villous at the base, shorter than the calyx. Awn inserted below the middle; jointed, longer than the calyx. Leaves bristle-shaped.

Engl. Bot. t. 812.—Curt. Fl. Lond. t. .—Knapp. Gram. Brit. t. 35.—Graves' Br. Grasses, t. 45.—Host. Gram. Austr. v. ii. p. 33. t. 44.—Fl. Dan. t. 382.—Still. Miscell. Tracts, t. 5.—Linn. Sp. Pl. p. 97.—Huds. Fl. Angl. (2nd ed.) p. 36.—Willd. Sp. Pl. v. i. pt. i. p. 380.—Sm. Fl. Br. v. i. p. 88.; Engl. Fl. v. i. p. 106.—With. (7th ed.) v. ii. p. 162.—Gray's Nat. Arr. v. ii. p. 134.—Lind. Syn. p. 308.—Hook. Brit. Fl. p. 36.—Macr. Man. Br. Bot. p. 266.—Lightf. Fl. Scot. v. i. p. 95.—Sibth. Fl. Oxon. p. 39.—Abbot's Fl. Bedf. p. 16.—Thomp. Pl. of Berw. p. 10,—Davies' Welsh Bot. p. 9.—Purt. Midl. Fl. v. i. p. 73.—Relh. Fl. Cant. (3rd edit.) p. 33.—Hook. Fl. Scot. p. 30.—Grev. Fl. Edin. p. 20.—Fl. Devon. pp. 14 & 122.—Johnst. Fl. Berw. v. i. p. 21.—Winch's Fl. of Northumb. & Durh. p. 6.—Walker's Fl. of Oxf. p. 20.—Perry's Pl. Varv. Selectæ, p. 8.—Bab. Fl. Bath. p. 57.; Prim. Fl. Sarn. p. 108.—Murr. Northern Fl. p. 54.—Dick. Fl. Abred. p. 23.—Irv. Lond. Fl. p. 96.—Luxf. Reig. Fl. p. 7.—Cow. Fl. Guide, p. 19.—Leight. Fl. of Shropsh. p. 60.—Mack. Catal. of Pl. of Irel. p. 13.; Fl. Hibern. p. 300.—*Gramen paniculatum minimum molle*, Scheuchz. Agrost. p. 215. t. 4. f. 15.—*Gramen paniculatum locustis parvis purpuro-argenties annuum*, Ray's Syn. p. 407.

LOCALITIES.—On heaths, hillocks, in pastures, and fallow fields, on a barren sandy soil; frequent.

Fig. 1. A Spikelet.—Fig. 2. A separate Floret.—Fig. 3. Germen, Styles, and Stigmas.—Fig. 4. A Seed.—Figs. 1, 2, & 3, *magnified.*

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[*] From *airo*, Gr. to *destroy*. This name was anciently applied to the *Lolium temulentum (bearded Darnel.)* on account of its injurious effects; and now to the present genus of grasses, though having little in common with it. Sir W. J. HOOKER.

[†] See folio 56, note †.

Annual.—Flowers from May to July.

Root small, fibrous. *Culms (stems)* slender, upright, from 2 to 6 inches or a foot high, cylindrical, jointed, smooth, leafy. *Leaves* few, slender, strap-shaped, short; those near the root soon withering; *sheaths* smooth, purplish, ribbed and striated. *Stipula (ligula)* large, spear-shaped, pointed, bifid. *Panicle* spreading, trichotomous, few-flowered; branches hair-like, angular, compressed, channelled, nearly smooth, slightly wavy. *Spikelets* (see fig. 1.) small, egg-shaped, silvery, often purplish-grey. *Glumes* (see fig. 1.) nearly equal, egg-spear-shaped, irregularly notched, rough at the keel and near the pellucid point, margins finely serrated. *Paleæ* (see fig. 2.) unequal, shorter than the glumes, the *outer* one largest, spear-shaped, rough, bristly near the point and edges, bifid, with a rough, twisted, slightly bent *awn*, proceeding from below its middle, longer than the glumes; *inner palea* bifid, with 2 smooth marginal ribs and incurved edges.

This elegant little grass is of no value to the farmer, as it furnishes but little herbage, and soon withers away; and unless it be sought for about the season of its flowering, it will not easily be discovered. The species most likely to be confounded with this by the young Botanist, is *Aira præcox*, but that is sufficiently marked by its very small size, spike-like panicle, and the inflated angular sheaths of its leaves. The white-pointed glumes, and smaller spikelets, of *Aira caryophyllea*, will distinguish it from *Aira flexuosa*, another nearly allied species.

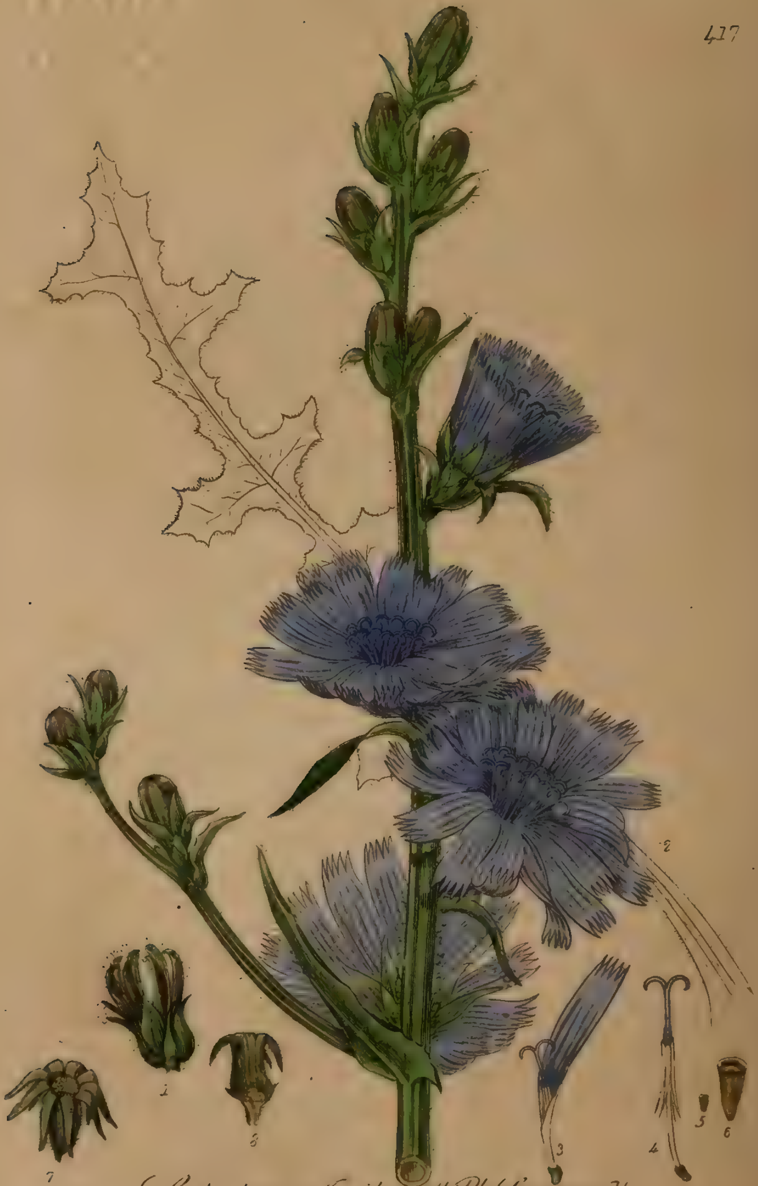
WEEDS.

" Scorn not those rude, unlovely things,
All cultureless that grow,
And rank, o'er woods, and wilds, and springs,
Their vain luxuriance throw.

Eternal love and wisdom drew
The plan of earth and skies,
And He, the span of heaven that threw,
Commands the weeds to rise.

Then think not nature's scheme sublime
These common things might spare :—
For science may detect in time
A thousand virtues there."

Chambers' Edinburgh Journal.



Cichorium Intibus. Wild Succory. ♃

Mathews Del & Sc

Pub.d by W Baxter Botanic Garden Oxford 1841

CICHO'RIUM*.

Linnean Class & Order. SYNGENE'SIA†, POLYGA'MIA, ÆQUALIS‡. *Natural Order.* COMPO'SITÆ§, *(Linn.)* tribe, CICHORA'CEÆ, Lindl. Syn. pp. 140 & 156.; Introd. to Nat. Syst. of Bot. pp. 197 and 201.—Loud. Hort. Brit. pp. 520 and 521.—Mack. Fl. Hibern. pp. 142 & 159.—Hook. Brit. Fl. (4th ed.) p. 410.—CICHORA'CEÆ, Juss. Gen. Pl. p. 158.—Sm. Gr. of Bot. p. 120.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—SYRINGALES; subord. ASTEROSÆ; type, CICHORACEÆ; Burn. Outl. of Bot. pp. 900, 901, & 935.

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) cylindrical, double; outermost of a few oblong, rather loose, shortish scales; inner of 8 or more, longer, converging, strap-shaped, equal ones, permanent, at length recurved (see fig. 7). *Corolla* (fig. 2.) compound, of about 20 spreading, somewhat imbricated, strap-shaped, blunt, deeply 5-toothed, perfect *florets*. *Filaments* (see fig. 4.) 5, hair-like, very short. *Anthers* (see figs. 4 & 5.) in a 5-angled tube. *Germen* (see figs. 3 & 4.) inversely egg-shaped. *Style* (see figs. 3 & 4.) thread-shaped, as long as the stamens. *Stigmas* revolute. *Seed-vessel* none, except the converging calyx. *Seed* (see figs. 5 & 6.) top-shaped, striated, blunt, *Pappus (down)* (see fig. 6.) sessile, scaly, shorter than the seed. *Receptacle* (see fig. 8.) naked or rather hairy.

The *involucrum* of about 8 scales, surrounded by 5 smaller ones at the base; the top-shaped, striated *seeds;* the sessile, scaly *pappus*, shorter than the seed; and the naked or slightly hairy *receptacle;* will distinguish this from other genera, with all the florets strap-shaped, in the same class and order.

One species British.

CICHO'RIUM I'NTYBUS. Wild Succory. Chiccory. Wild Endive.

SPEC. CHAR. Flowers in pairs, axillary, nearly sessile. Leaves runcinate.

Engl. Bot. t. 539.—Curt. Fl. Lond. t. 241.—Mart. Fl. Rust. t. 144.—Woodv. Med. Bot. Suppl. t. 248.—Fl. Dan. t. 907.—Linn. Sp. Pl. p. 1142.—Huds. Fl. Angl. (2nd edit.) p. 348.—Willd. Sp. Pl. v. iii. pt. III. p. 1628.—Sm. Fl. Brit. v. ii. p. 843.—Engl. Fl. v. iii. p. 379.—With. (7th ed.) v. iii. p. 905.—Lindl. Syn. p. 162.—Hook. Brit. Fl. p. 348.—Macr. Man. Brit. Bot. p. 140.—Sibth. Fl. Oxon. p. 243.—Abb. Fl. Bedf. p. 173.—Thomp. Pl. of Berw. p. 80.—Thornt. Fam. Herb. p. 680, with a figure.—Davies' Welsh Bot. p. 75.—Purt. Midl. Fl. v. ii. p. 373.—Relh. Fl. Cant. (3rd ed.) p. 327.—Hook. Fl. Scot. p. 234.—Grev. Fl. Edin. p. 171.—Fl. Devon. pp. 132 & 156.—Johnst. Fl. of Berw. v. i. p. 177.—Winch's Fl. of Northumb. and Durh. p. 52.—Walker's Fl. of Oxf. p. 227.—Loud. Encycl. of Gard. (new ed.) p. 859.—Perry's Pl. Varvic. Selectæ, p. 67.—Pamp. Catal. of Pl. of Battersea, p. 14.—Bab. Fl. Bath. p. 29. ; Prim. Fl. Sarn. p. 56.—Lindl. Fl. Med. p. 470.—Irv. Lond. Fl. p. 152.—Luxf. Reig. Fl. p. 68.—Cow. Fl. Guide, p. 27.—Baines' Flora of Yorkshire, p. 65.—Leight. Fl. of Shropsh. p. 397.—Mack. Catal. of Pl. of Irel. p. 71. ; Fl. Hibern. p. 166.—*Cichorium sylvestre*, Ray's Syn. p. 172.—Johns. Ger. p. 284.—Bauh. Hist. v. ii. p. 1007. f. 1008.—Gray's Nat. Arr. v. ii. p. 432.—*Cichorium sylvestre, sive officinarum*, Bauh. Pin. p. 125.

Fig. 1. Involucrum.—Fig. 2. Corolla.—Fig. 3. A separate Floret.—Fig. 4. Stamens and Pistil.—Figs. 5 & 6. Seed.—Fig. 7. Involucrum and Seed.—Fig. 8. A vertical section of the Involucrum, showing the Receptacle.—Figs. 4 & 6, *are a little magnified.*

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* From *chikoùryeh*, the Arabic name.

† See fol. 91, n. †.

‡ See fol. 147, note ‡.

§ See fol. 27, *a*.

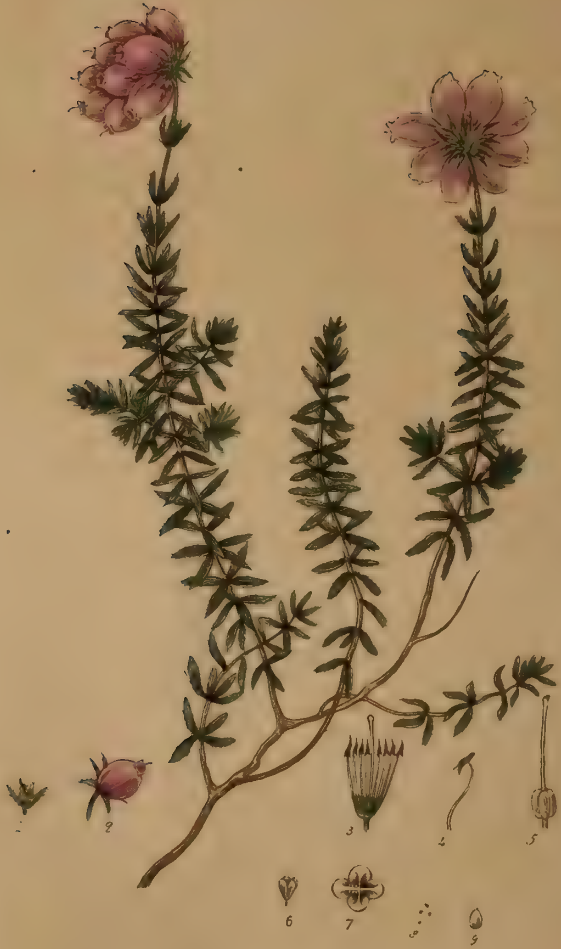
Localities.—About the borders of fields, in waste places, and by road-sides, chiefly on a gravelly or chalky soil.

Perennial.—Flowers in July and August.

Root spindle-shaped, fleshy, often more or less branched, of a yellowish colour externally, whitish within, milky. *Stem* from 1 to 3 feet high, upright, angular, furrowed, alternately branched, very tough, solid, rough with bristly hairs, leafy. *Root-leaves* numerous, spreading, above a span long, runcinate, toothed, rough, on dilated petioles; *stem-leaves* much smaller, sessile, less lobed, the upper ones heart-spear-shaped, entire. *Flowers* numerous, large and very handsome, of a beautiful bright, but pale, blue, sometimes white, all nearly or quite sessile, growing generally in pairs, in the axils of the uppermost leaves. *Calyx* composed of a double series of scales or leaves, the outer of which are 5 in number, egg-shaped, pointed, somewhat spreading, and edged with glandular hairs; innermost about 8, narrow and equal, forming an angular, clammy cylindar. *Corolla* of about 20, strap-shaped *florets* (see fig. 3.) each with a cylindrical, short, white *tube*, and a flat *limb*, with 5 deep teeth at the extremity. *Filaments* whitish. *Anthers* and *Stigmas* blue. *Seed* somewhat club-shaped, obscurely 4-sided, blunt. *Pappus* of very small, upright, chaffy bristles. *Receptacle* slightly chaffy, with a few slender scales, shorter than the seed.

The fine blue colour of the florets is convertible into a brilliant red by the acid of Ants; and it is said, that in Germany the boys often amuse themselves in producing this change of colour by placing the blossoms in an Ant hill.

In a wild state this very beautiful plant is considered little better than a troublesome weed. Its root is said to be tonic, and in large doses aperient. It has been used in chronic viscera and cutaneous diseases, especially in the form of decoction. A large-leaved variety is sometimes cultivated in gardens as an early salad, and occasionally in the fields, as a fodder for cattle. On the Continent it is of much repute for the sake both of its leaves and root; the latter, when full grown, is cut into slices, roasted, ground down, and used instead of coffee, and, although it was first employed either to adulterate the Mocha drink, or as a poor substitute for it when the berry was too expensive for general consumption, its use is now established, and, when mixed with coffee, it is by some persons believed to improve its flavour. In France the young leaves are used in salads; and the shoots from the root, blanched by being forced in a dark cellar, are much relished as a winter salad, under the name of *Barbe-de-Capucin.* Sometimes the roots are packed among moist sand in a barrel, having numerous round holes pierced in its sides; the crowns of the roots being so placed, that the shoots may readily push their way through the holes; by this method they are kept quite clean, and are very easily gathered as wanted, and repeated cuttings are obtained. See *Mill. Gard. Dict.; Neil's Hort. Tour.; Burn. Outl. of Bot.;* and *Loud. Encycl. of Gardening;* especially the latter, for further information respecting the culture, uses, &c., of this plant.



Erica Tetralix. Croſs-leaved Heath. ♄

Ruſsell Del

Pub.d by W. Baxter, Botanic Garden, Oxford 1841

Mathews. Sc

ERI'CA *.

Linnean Class and Order. Octa'ndria †, Monogy'nia.

Natural Order. Eri'ceæ, *Brown's* Prod. p. 557.—Lindl. Syn. p. 172.; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit, p. 523.—Mack. Fl. Hibern. p. 179.—Hook. Brit. Fl. (4th ed.) p. 411.—Erica'ceæ; subtribe, Eri'ceæ Norma'les, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 & 786.—Loud. Arb. et Frutic. Brit. pp. 1076 & 1079.—Ericineæ, Rich. by Macgilliv. p. 450.—Ericæ, Juss. Gen. Pl. p. 159.—Sm. Gr. of Bot. p. 115—Syringales; subord. Ericosæ; sect. Ericinæ; type, Ericaceæ; subtype, Ericidæ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—Bicornes, *Linn.*

Gen. Char. *Calyx* (fig. 1.) inferior, 4-parted, with a naked base. *Corolla* (see fig. 2.) of 1 petal, globose, or bell-shaped, often ventricose, with a 4-cleft limb. *Filaments* (see fig. 3.) 8, hair-like, arising from the receptacle. *Anthers* (see fig. 4.) terminal, upright, cloven, opening by lateral orifices, which adhere to those of the next anther till the pollen is discharged. *Germen* (see fig. 5.) superior, roundish. *Style* (see fig. 5.) thread-shaped, upright. *Stigma* blunt. *Capsule* (see figs. 5, 6, & 7.) roundish, with 4 furrows, 4 cells, and 4 valves, each bearing a dissepiment (partition) from the centre (see fig. 7). *Seeds* (figs. 8 & 9.) numerous, minute.

The 4-parted *calyx*, naked at the base; the monopetalous, globose or bell-shaped, often ventricose *corolla;* and the 4-celled, 4-valved *capsule*, with the dissepiments from the middle of the valves; will distinguish this from other genera in the same class and order.

Seven species British.

ERI'CA TE'TRALIX. Four-leaved Heath. Cross-leaved Heath. Besom Heath.

Spec. Char. Leaves 4 in a whorl, ciliated. Flowers capitate, terminal. Corolla egg-shaped, as long as the style. Anthers with two spear-shaped spurs at the base, included.

Engl. Bot. t. 1014.—Curt. Fl. Lond. t. .—Fl. Dan. t. 81.—Linn. Sp. Pl. p. 502.—Huds. Fl. Angl. (2nd ed.) p. 166.—Willd. Sp. Pl. v. ii. pt. I. p. 368.—Sm. Fl. Brit. v. i. p. 418; Engl. Fl. v. ii. p. 226.—With. (7th ed.) v. ii. p. 484.—Lindl. Syn. p. 174.—Hook. Brit. Fl. p. 176.—Loud. Arb. et Frutic. Brit. p. 1079. f. 864.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 792.—Macr. Man. Brit. Bot. p. 149.—Lightf. Fl. Scot. v. i. p. 205.—Sibth. Fl. Oxon. p. 127.—Abbot's Fl. Bedf. p. 87.—Thomp. Pl. of Berw. p. 41.—Davies' Welsh Bot. p. 37.—Purt. Midl. Fl. v. i. p. 192.—Relh. Fl. Cant. (3rd ed.) p. 159.—Hook. Fl. Scot. p. 119.—Grev. Fl. Edin. p. 88.—Fl. Devon. pp. 68 & 153.—Johnst. Fl. of Berw. v. i. p. 89.—Winch's Fl. of Northumb. and Durh. p. 25.—Walker's Fl. of Oxf. p. 110.—Perry's Pl. Varvic. Selectæ, p. 35.—Pamp. Pl. of Bat. p. 9.—Bab. Fl. Bath. Suppl. p. 83.; Prim. Fl. Sarn. p. 60.—Dick. Fl. Abred. p. 35.—Irv. Lond. Fl. p. 142.—Luxf. Reig. Fl. p.

Fig. 1. Calyx.—Fig. 2. Calyx and Corolla.—Fig. 3. Stamens and Pistil.—Fig. 4. A single Stamen.—Fig. 5. Germen, Style, and Stigma.—Fig. 6. Capsule.—Fig. 7. Capsule opened to show the Dissepiments.—Figs. 8 & 9. Seed.—Figs. 3, 4, 5, 7, and 9, *magnified.*

* From *erico*, Gr. or *ereico*, Gr. to *break;* from the supposed quality of some species in destroying calculi in the bladder.

Within the last twelve years four species of this beautiful genus have been added to the British Flora; namely, *E. Mackáii*, *E. Mediterrânea*, *E. carnea*, and *E. ciliáris.*

† See folio 42, note †.

33.—Bain's Fl. of Yorksh. p. 70.—Leight. Fl. of Shropsh, p. 164.—Mack. Catal. Pl. of Irel. p. 37.; Fl. Hibern. p. 181.—*Erica botuliformis*, Salisb. in Tr. of Linn. Soc. v. vi. p. 369.—*Erica Barbantica folio coridis hirsuto quaterno*, Ray's Syn. p. 471.—*Erica ex rubro nigricans scoparia*, Bauh. Pin. p. 486.—*Erica anglicana parva, capitulis hirsutis*, Bauh. Hist. v. i. pt. II. lib. 10. p. 358.—*Eremocallis glomerata*, Gray's Nat. Arr. v. ii. p. 398.

LOCALITIES.—On heaths, and moory ground; frequent.

A small Shrub.---Flowers from June to September.

Root creeping. *Stems* numerous, upright, from 4 inches to a foot or more high, branched, leafy, brownish, clothed with projecting hairs; naked at bottom, and very rough from the remains of the leaves which have fallen off. *Leaves* crowded, spreading, on short, somewhat decurrent, petioles, 4 in a whorl, sometimes 5, egg-spear-shaped or oblong, the upper surface covered with dense white down, the margins revolute and nearly smooth, fringed with long projecting bristles, which, in the young leaves, are each tipped with a small round globule; under surface white, with a downy mid-rib. *Flowers* of a delicate wax-like hue, of every shade of rose-colour, sometimes snow-white, on short downy peduncles, collected into a dense, round, terminal, capitate *cluster*, all elegantly drooping towards one side. *Calyx* oblong; *sepals* strap-shaped, downy, and fringed with glandular bristles. *Corolla* (fig. 2.) about three lines long, nearly egg-shaped, ventricose, a little downy near the mouth, which is small, and 4-cleft. *Stamens* concealed within the corolla; *anthers* with a pair of simple appendages, or horns, at the base of each. *Style* about as long as the corolla, in some flowers slightly protruding. *Capsule* roundish, hairy; *valves* concave, with a fixed partition (dissepiment) from the centre of each. *Seeds* numerous, very small, egg-shaped, yellowish, minutely pitted. Whole plant of a greyish hue.

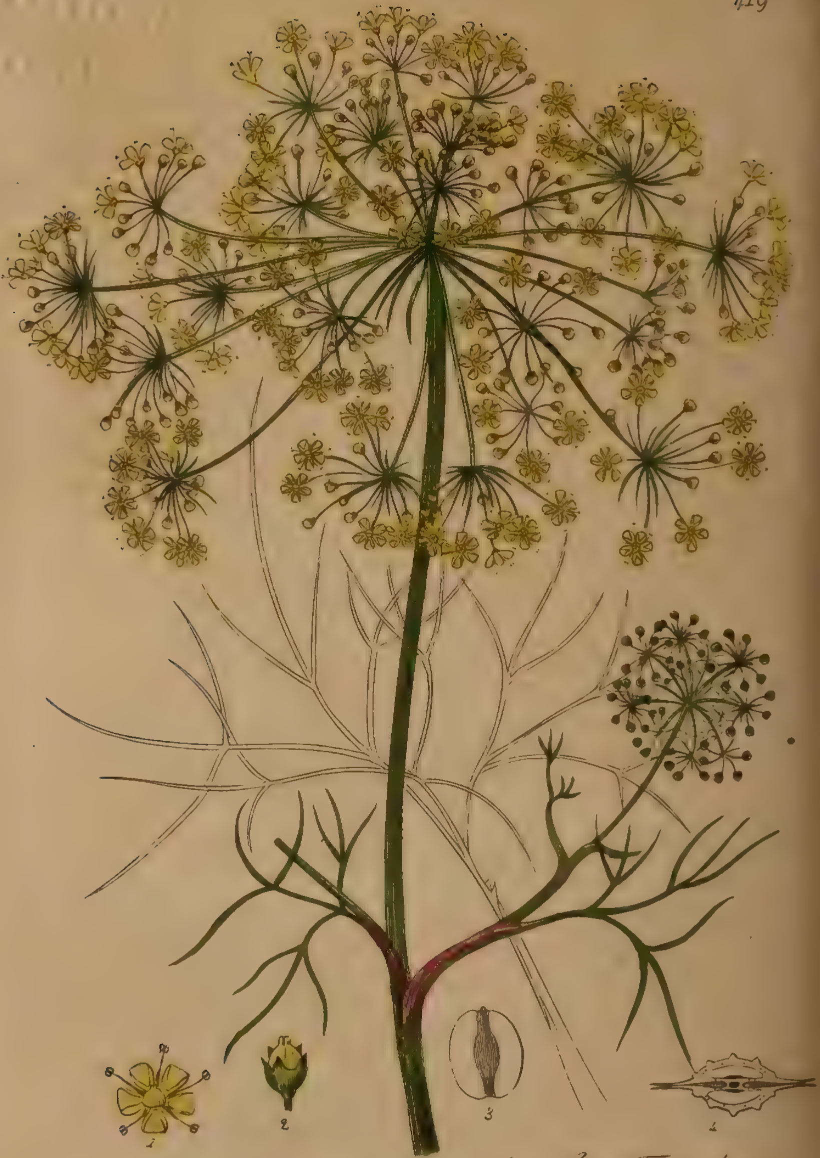
In June, 1833, Mr. LEIGHTON found on the Vownog Bog near Westfelton, Shropshire, a plant of this species having the corolla cleft into several divisions, and the place of the stamens occupied by petal-like segments bearing imperfectly developed lobes of anthers; a few perfect stamens were also present. The same transformation in the corolla of this species had been previously observed by W. C. TREVELYAN, Esq. See *Hook. Brit. Fl.* (1st ed.) p. 176.

Erica tetralix is a native of most parts of the North of Europe, in boggy or moory ground. It is a handsome little plant, and well worthy a place in the flower garden. Sir J. E. SMITH observes, "It is wonderful that this most elegant, and not uncommon, plant is scarcely delineated at all by the old authors, nor by any of them correctly." It is the badge of the Scottish Clan MACDONALD. In the language of flowers, *Heath* is made the emblem of solitude; and thus, when the lover presents his mistress with a bouquet of heath and pansies, she understands his heart would be at ease, if his solitude were blessed by her society.

"Some poets praise the violet's hue,
And some the lily's lightness;
Some Scotland's bells of bonny blue,
And some the rose's brightness;
But, oh, give me the heath in bloom,
That, on the wild moor growing,
So sweetly scatters its perfume
When wint'ry winds are blowing!

"Rich odours seethe the mignonette,
And fill the young May-flower;
And there's a softer fragrance yet
Breathes in the jessamine bower.
But, oh, give me the heath in bloom,
That, on the wild moor growing,
So sweetly scatters its perfume
When wint'ry winds are blowing."

J. L. STEVENS.



Peucedanum Officinale. Sea Hog's Fennel. ♃

Mathews Del & Sc

Pub^d by W. Baxter Botanic Garden Oxford 1841

PEUCE'DANUM[*].

Linnean Class and Order. PENTA'NDRIA[†], DIGY'NIA.

Natural Order. UMBELLI'FERÆ[‡], Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* (fig. 1.) regular, uniform, imperfectly separated; the innermost barren or abortive. *Calyx* (see fig. 2.) of 5, acute, ascending, permanent teeth. *Corolla* (see fig. 1.) of 5 nearly equal, inversely heart-shaped petals, with inflexed points. *Filaments* (see fig. 1.) 5, hair-like, spreading beyond the petals. *Anthers* roundish. *Germen* (see fig. 1.) inferior, oblong, a little compressed at the sides. *Styles* 2, small, recurved, tumid and egg-oblong at the base; at length somewhat enlarged, permanent. *Fruit* (fig. 3.) flat, with a broad thin border. *Carpels* with equidistant ribs; the 3 middle ones slightly prominent, the 2 lateral more obsolete, and contiguous to the dilated margin, or lost in it. *Interstices (channels)* (see fig. 4.) with from 1 to 2 *vittæ*. *Seed* flat in front. *Universal Involucrum* various; *partial one* many-leaved. *Flowers* small, yellow or white.

The 5-toothed *calyx;* the *corolla* of 5 nearly equal, inversely heart-shaped petals, with inflexed points; the flat *fruit*, with a broad thin border; the *carpels* with equidistant ribs; the 3 middle ones slightly prominent, the 2 lateral ones more obsolete; and the channels with from 1 to 2 *vittæ* in each; will distinguish this from other genera, in which the fruit is dorsally compressed and destitute of prickles, in the same class and order.

Two species British.

PEUCE'DANUM OFFICINALE. Officinal Hog's Fennel. Sea Sulphur-wort. Brimstone-wort. Horsestrong. Harestrange.

SPEC. CHAR. Leaves five times deeply 3-cleft; segments thread-strap-shaped, flaccid. Leaves of involucrum strap-shaped, almost hair-like. Flowers yellow.

Engl. Bot. t. 1767.—Linn. Sp. Pl. p. 353.—Huds. Fl. Angl. (2nd ed.) p. 116.—Willd. Sp. Pl. v. i. pt. II. p. 1405.—Sm. Fl. Brit. v. i. p. 304.; Engl. Fl. v. ii. p. 99.—With. (7th ed.) v. ii. p. 373.—Gray's Nat. Arr. v. ii. p. 522.—Lindl. Syn. p. 117.—Hook. Brit. Fl. p. 118.—Macr. Man. Brit. Bot. p. 102.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 330.—Jacob's Pl. Faversh. p. 83.—Bab. Prim. Fl. Sarn. p. 44.—Irv. Lond. Fl. p. 234.—Lindl. Fl. Med. p. 48.—Cow. Fl. Guide, p. 40.—*Peucédanum*, Ray's Syn. p. 206.—Johnson's Gerarde, p. 1054. 1.—*Peucedanum vulgare*, Park. Theat. Bot. p. 880. 2.—Blackst. Spec. Bot. p. 71.—*Peucédanum Germanicum*. Bauh. Pin. p. 149.—*P. majus italicum*, ibid.—*P. minus germanicum, et majus italicum*, Bauh. Hist. v. iii. pt. II. p. 36.

Fig. 1. A Flower.—Fig. 2. Calyx, Germen, and Styles.—Fig. 3. Fruit.—Fig. 4. Transverse section of ditto.—*All, more or less, magnified.*

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[*] From *peuke*, Gr. a *pine-tree;* and *daños*, Gr. *dwarf;* on account of a resinous substance, said to exude from some of the species.

[†] See folio 48, note †.

[‡] See folio 235, *a*.

Localities.—In salt-marshes; very rare.—*Essex;* At Walton, near Harwich: Ray.—*Kent;* About a quarter of a mile below Faversham, by the river side: Mr. J. Sherard. On the wall leading to Thorn Creek, near Faversham, plentifully: E. Jacob, Esq. About three miles east of Whitstable: 1824; Mr. W. Pamplin, jun. East Kent: Rev. G. E. Smith, in N. B. G.—*Notts;* Wood at Colwick: Martyn.—*Sussex;* In the ditches near Shoreham, according to Ray, but it has been sought for there in vain; it is probable *Œnanthe pimpinelloides* was mistaken for it.

Perennial.---Flowers from June to September.

Root spindle-shaped, with strong, branching fibres, resinous, smelling like sulphur. *Stem* upright, from 2 to 4 feet high, cylindrical, branched, striated, bright green, jointed, smooth, leafy. *Leaves* copious, alternate, on channelled leaf-stalks, sheathing at the base, large, 4 or 5 times 3-parted, their ultimate segments about an inch and a half long, very narrow, strap-shaped, and almost hair-like, flat, pointed, 3-ribbed. *Universal umbel* large, of many unequal, smooth, lax rays, and an *involucrum* of about 3 narrow bristle-shaped, deciduous leaves (bracteas). *Partial umbels* also of many unequal rays, with an *involucrum* of many permanent bristle-like leaves. *Flowers* numerous, of an uniform buff-yellow. *Calyx-teeth* sharp pointed, bent inwards. *Petals* equal, incurved. *Styles* reflexed. *Fruit* about 3 lines long, oblong, with a shallow notch at each end, pale light brown, the *vittæ* deep chocolate colour, the primary ribs much depressed and paler, the lateral resembling deep furrows between them and the dilated margin. *Commissure* (inner face of the carpels) light fawn colour, with two crimson *vittæ* very conspicuous upon it. (See *Lindl. Fl. Med.*)

This species is a native of the most southern parts of Europe in moist meadows. The whole plant, especially the *root*, has a strong sulphurous smell. The latter wounded in the Spring yields a considerable quantity of yellow juice, which dries into a gummy resin, and retains the strong scent of the root. Many stimulating qualities have been attributed to it, but it is considered dangerous for internal use.

"Nor is the mead unworthy of thy foot,

Full of fresh verdure, and unnumber'd flowers,

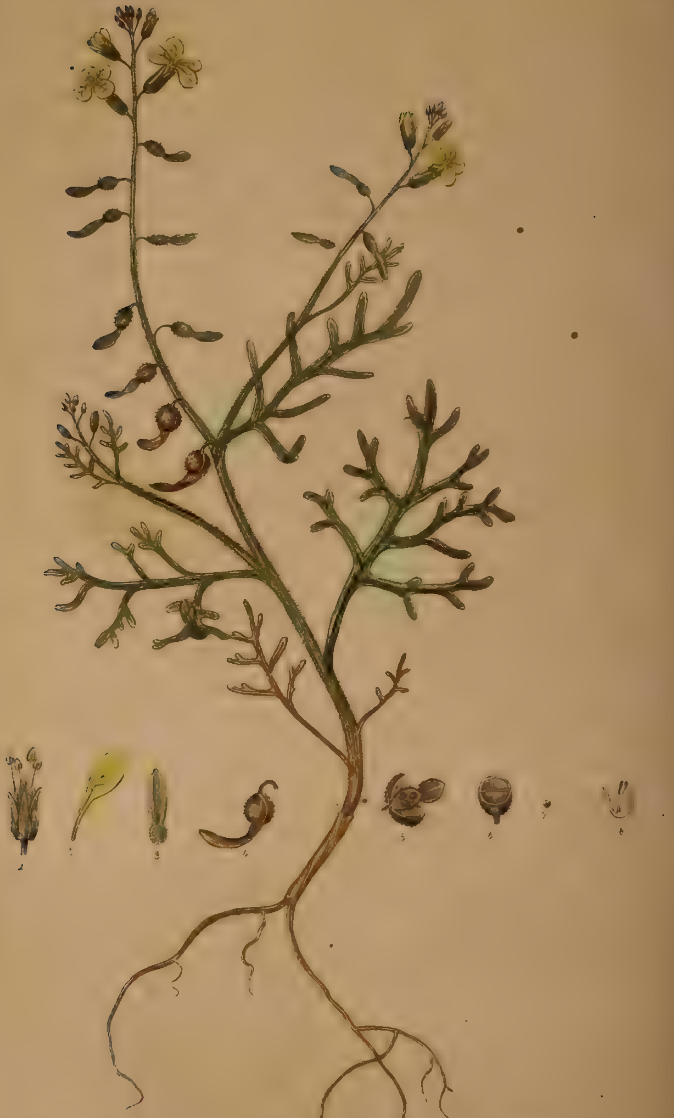
The negligence of Nature, wide, and wild;

Where, undisguished by mimic art, she spreads

Unbounded beauty to the roving eye."

Thomson.

420



Vella annua. Annual Creſs rocket. ☉

Mathews Del & Sc

Pub^d by T. Baxter Botanic Garden Oxford 1841

VE′LLA*.

Linnean Class and Order. TETRADYNA′MIA†, SILICULO′SA‡.

Natural Order. CRUCI′FERÆ§, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498. CRUCIFERÆ; subord. ORTHOPLO′CEÆ||; tribe, VELLEÆ, Lindl. Syn. pp. 20 & 33.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146, 150, & 254.—Hook. Brit. Fl. (4th edit.) p. 397 & 398.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, RAPHANIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 853, & 860.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) upright, equal at the base, deciduous; sepals oblong, pointed. *Corolla* of 4, inversely egg-shaped, entire petals (fig. 2.), their claws as long as the calyx. *Filaments* (see fig. 1.) 6, awl-shaped, 4 of them longer than the calyx, in one or two exotic species they are connate. *Anthers* somewhat heart-shaped, bluntish. *Germen* (see fig. 3.) egg-shaped. *Style* (see fig. 3.) vertical, dilated, elliptical, leafy, longer than the germen, permanent. *Stigma* blunt. *Pouch (silicle)* (fig. 4.) swollen, with a dilated, flat, winged *Style*, twice as long as the valves; *Valves* (see fig. 5.) 2, concave, opening longitudinally. *Partition (dissepiment)* broad, membranous, continued into the style. *Seeds* (see figs. 5 & 7.) few in each cell, globose, pendulous. *Cotyledons* folded together (o ⊳ ⊳).

The swollen *pouch*, with a dilated, flat, winged *style*, twice as long as the valves; and the conduplicate *cotyledons;* will distinguish this from other genera in the same class and order.

One species British.

VE′LLA A′NNUA. Annual Cresset. Valencia Cress. Cress Rocket. Spanish Wild Cress.

SPEC. CHAR. Leaves doubly pinnatifid. Pouches pendulous.

Engl. Bot. t. 1442.—Linn. Sp. Pl. p. 895.—Huds. Fl. Angl. (2nd ed.) p. 278.—Willd. Sp. Pl. v. iii. pt. I. p. 422.—Sm. Fl. Brit. v. ii. p. 675.; Engl. Fl. v. iii. p. 156.—With. (7th ed.) v. iii. p. 754.—Ait. Hort. Kew. 1st ed. v. ii. p. 370.; ibid. 2nd ed. v. iv. p. 79.—Gray's Nat. Arr. v. ii. p. 691.—Hook. Brit Fl. p. 295.—Irv. Lond. Fl. p. 262.—*Carrichtera vellæ*, Decand. Syst. v. ii. p. 642.—Lindl. Syn. p. 33.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 254.—*C. Vella*, Macr. Man. Brit. Bot. p. 22.—*Nasturtium sylvestre*, ***Erucæ affine***, Bauh. Pin. p. 105.—Ray's Syn. p. 304.—Moris. v. ii. p. 301. sect. 3. t. 19. f. 8.—*Nasturtium sylvestre valentinum*, Clus. Hist. v. ii. p. 130, with a figure.—Bauh. Hist. v. ii. p. 920, with a figure.—Park. Theat. Bot. pp. 829 & 830, with a figure.—*Nasturtium sylvestre Clusii*, Dalech. Hist. p. 657, with a figure.—*Eruca nasturtio cognata*

Fig. 1. Calyx and Stamens.—Fig. 2. A Petal.—Fig. 3. Germen, Style, and Stigma.—Fig. 4. A Pouch with the permanent, strap-shaped Style.—Fig. 5. A Pouch with the valves open, showing the dissepiment, the seeds, and the permanent style.—Fig. 6. A Pouch cut transversely, showing the 2 cells.—Fig. 7. A Seed.—Fig. 8. The conduplicate Cotyledons, *highly magnified.*

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* A name adopted by GALEN, and latinized from the Celtic, signifying a sort of *Cress.* WITHERING.

† See fol. 38, n, †. ‡ See fol. 107, n. ‡. § See fol. 38, *a*. || See fol. 107, n. ||

tenuifolia, Johnson's Gerarde, p. 247, with a figure.—Lob. Ic. p. 205, with a figure.—*Valencia Cress*, Petiv. H. Brit. t. 50. f. 5.

LOCALITIES.—In sandy fields, but very rare.—*Wiltshire;* Found by Mr. LAWSON on Salisbury Plain, not far from Stonehenge: RAY, (1690). Not found there since.

Annual.—Flowers in June. DON says in February and March, in gardens.

Root small, tapering, fibrous. *Stem* upright, from 3 to 9 inches high, branched, leafy, rough with deflexed bristles. *Leaves* scattered, doubly pinnatifid, with strap-shaped, bluntish, decurrent segments. *Racemes* opposite the leaves, upright, elongated; *pedicels* short, thread-shaped, without bracteas. *Flowers* small. *Calyx* (see fig. 1.) tubular, shining, purplish, closed with the sepals converging longitudinally. *Petals* (see fig. 2.) inversely heart-shaped, entire, pale yellow, with deep purple veins, and very slender claws. *Pouch (silicle)* (see fig. 4.) pendulous, nearly globular, 2-celled, and 2-valved; valves crustaceous, with 3 raised, bristly ribs, on the outside; polished and shining within. *Partition* parallel to the valves, very thin, and almost transparent, surmounted by the egg-shaped, curved, smooth, ribbed, rigid *style*. *Seeds* 3 or 4 in each cell, nearly globular, angular, of a dark rusty-colour; DECANDOLLE remarks, that they became covered with a glutinous exudation, on being immersed in warm water. The expanded *cotyledons*, remaining for some time on the stem, are inversely heart-shaped, flat, quite smooth and even. See *Sm. Engl. Fl.* and *Mart. Mill. Gard. Dict.*, *&c.*

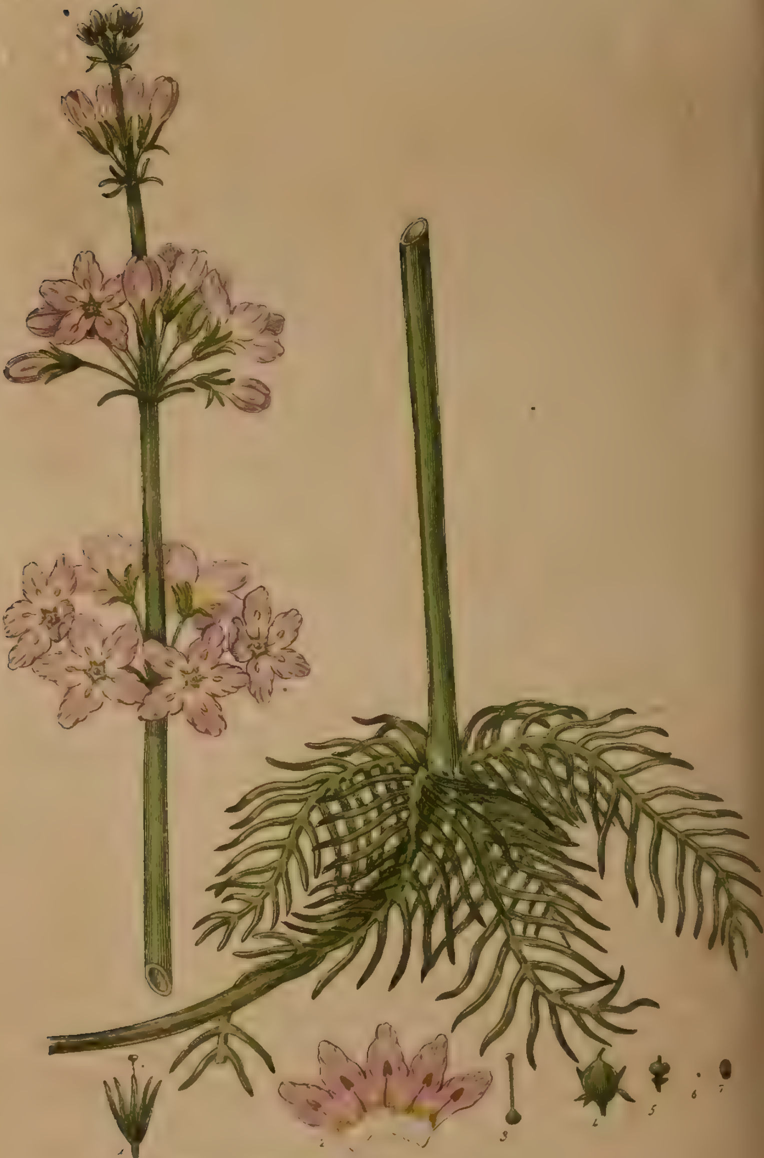
This curious little plant is a native in sandy and waste fields, and along way and wall sides in Spain, Balearic Islands, Mauritania, Sicily, Greece, and Syria. In England it is a very doubtful native, having been found only once, as recorded above. The whole herb is acrid and pungent to the taste, and might, if required, be used as a condiment.

The drawing for the accompanying plate was made from a well preserved specimen in the *Sherardian Herbarium.*

"Stoop where thou wilt, thy careless hand
Some random bud will meet:
Thou canst not tread but thou wilt find
The daisy at thy feet.

'Tis like the birthday of the world,
When earth was born in bloom;
The light is made of many dyes,
The air is all perfume;
There's crimson buds, and white and blue—
The very rainbow show'rs
Have turn'd to blossoms where they fell,
And sown the earth with flow'rs."

T. MEADOWS.



Hottonia palustris. Water Hottonia. ♃

Russell del. [illegible] Holmes sc.

HOTTO'NIA *.

Linnean Class and Order. PENTA'NDRIA †, MONOGY'NIA.

Natural Order. PRIMULA'CEÆ ‡, *Vent.*—Lindl. Syn. p. 182.; Introd. to Nat. Syst. of Bot. p. 225.—Rich. by Macgilliv. p. 431.—Loud. Hort. Brit. p. 529.—Mack. Fl. Hib. p. 192.—Hook. Brit. Fl. (4th edit.) p. 415.—LYSIMACHIÆ; sect. 1. Juss. Gen. Pl. p. 95.—Sm. Gr. of Bot. p. 95.—SYRINGALES; subord. PRIMULOSÆ; sect. PRIMULINÆ; type, PRIMULACEÆ; subty. PRIMULIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 1020, 1024, & 1025.—PRECIÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 deep, strap-shaped, rather spreading segments. *Corolla* (fig. 2.) of 1 petal, salver-shaped; tube cylindrical, open, about as long as the calyx; limb flat, in 5 deep, oblong, notched, equal segments. *Filaments* (see fig. 2.) 5, awl-shaped, short, inserted at the mouth of the tube, each opposite to a segment of the limb. *Anthers* incumbent, oblong. *Germen* (see fig. 3.) globular, pointed. *Style* (see fig. 3.) short, cylindrical. *Stigma* globose, undivided. *Capsule* (fig. 4.) globose, 1-celled, tipped with the long, permanent style. *Seeds* numerous, roundish, covering the large, roundish, central, unconnected receptacle (fig. 5).

The inferior, 5-parted *calyx;* the salver-shaped *corolla,* with a short tube, and a 5-lobed limb, with the stamens from the margin of the tube; the globose *stigma;* and the 1-celled *capsule,* tipped with the long permanent style; will distinguish this from other genera in the same class and order.

One species British.

HOTTO'NIA PALU'STRIS. Marsh Hottonia. Water Violet. Water Featherfoil. Water Gilly-flower. Water Milfoil.

SPEC. CHAR. Flowers whorled, on a long solitary cylindrical stalk. Corolla longer than the calyx. Leaves pectinated.

Engl. Bot. t. 364.—Curt. Fl. Lond. t. .—Fl. Dan. t. 487.—Linn. Sp. Pl. p. 208.—Huds. Fl. Angl. (2nd ed.) p. 85.—Willd. Sp. Pl. v. i. pt. II. p. 812.—Sm. Fl. Brit. v. i. p. 226.; Engl. Fl. v. i. p. 276.—With. (7th edit.) v. ii. p. 293.—Gray's Nat. Arr. v. ii. p. 301.—Lindl. Syn. p. 185.—Hook. Brit. Fl. p. 91.—Macr. Man. Brit. Bot. p. 189.—Sibth. Fl. Oxon. p. 73.—Abbot's Fl. Bedf. p. 45.—Davies' Welsh Bot. p. 21.—Purt. Midl. Fl. v. i. p. 123.—Relh. Fl. Cant. (3rd ed.) p. 86.—Rev. G. E. Smith's Pl. of S. Kent, p. 13.—Pamp. Pl. of Battersea, p. 6.—Winch's Fl. of Northumb. & Durh. p. 13.—Walker's Fl. of Oxf. p. 53.—Perry's Pl. Varvic. Selectæ, p. 17.—Irv. Lond. Fl. p. 141.—Baines' Fl. of Yorksh. p. 75.—Leight. Fl. of Shropsh. pp. 105 & 512.—Mack. Catal. Pl. of Irel. p. 22.; Fl. Hibern. p. 194.—*Hottonia,* Ray's Syn. p. 285.—*Myriophyllum alterum,* Matth. Valgr. v. ii. p. 511, with a figure.—*Viola palustris,* Johnson's Gerarde, p. 826.

Fig. 1. Calyx.—Fig. 2. Corolla, opened vertically.—Fig. 3. Germen, Style, and Stigma.—Fig. 4. Capsule.—Fig. 5. The Placenta or Receptacle of the Seeds.—Fig. 6. A Seed.—Fig. 7. The same, *a little magnified.*

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* So named by BOERHAAVE in honour of Dr. PETER HOTTON, who was curator of the Leyden Botanic Garden, as well before the return of HERMANN as after his decease; and on the last occasion was the immediate predecessor of BOERHAAVE. He published, *Sermo Academicus, quo rei herbariæ historia et fata adumbrantur.* 1695, 4to. D. TURNER, Esq. in *Correspondence* of Dr. RICHARDSON, p. 17.

† See fol. 48, note †.

‡ See fol. 296, *a.*

LOCALITIES.—In ditches and ponds, on a gravelly soil.—Not unfrequent in many counties of England; also in Wales.—It has not been found in Scotland; and it is rare in Ireland: Mr. MACKAY informs us, in his excellent *Flora Hibernica*, that it was first found in that country about the year 1818, in ditches or drains near Downpatrick, by Dr. KENNEDY, then a young and promising Botanist, who died shortly afterwards.

Perennial.—Flowers in May and June.

Root creeping, sending out many white slender fibres, which strike deep into the mud. *Stems* trailing, round, leafy. *Leaves* all under water, numerous, crowded, smooth, 3 or 4 inches long, bright green, deeply and regularly pinnatifid, with strap-shaped segments. *Stalks* central, solitary; naked below, rising above the water, and bearing several whorls of flowers one above the other, and forming, altogether, a handsome spike. *Flowers* large and handsome, of an elegant pink or deep rose-colour, with a yellow centre; from six to ten in a whorl, each on a slender partial-stalk, which bends downwards when the flowers are over. *Bracteas* strap-shaped, one at the base of each partial-stalk. Both the general and partial stalks, as well as the bracteas and calyx, are covered with a glandular viscid pubescence. Sometimes the flowers have six stamens, and then the calyx and corolla are each divided into six segments. A variety with a *red* flower was found near Kelmarsh, in Northamptonshire, by Mr. RUDGE.

The *Hottonia* is one of the most beautiful of our native plants, and is highly deserving a place with *Nymphæa* (t. 181), *Nuphar* (t. 281.), *Butomus* (t. 34.), *Sagittaria* (t. 109.), *Villarsia* (t. 161.), and *Menyanthes* (t. 245), in the ornamental Aquarium. The flowers are numerous, and very elegant, and are produced in whorled clusters, raised above the water. The leaves are all under water, and afford a refuge, and perhaps nourishment, to the fresh-water Periwinkle and other small shell-fish.

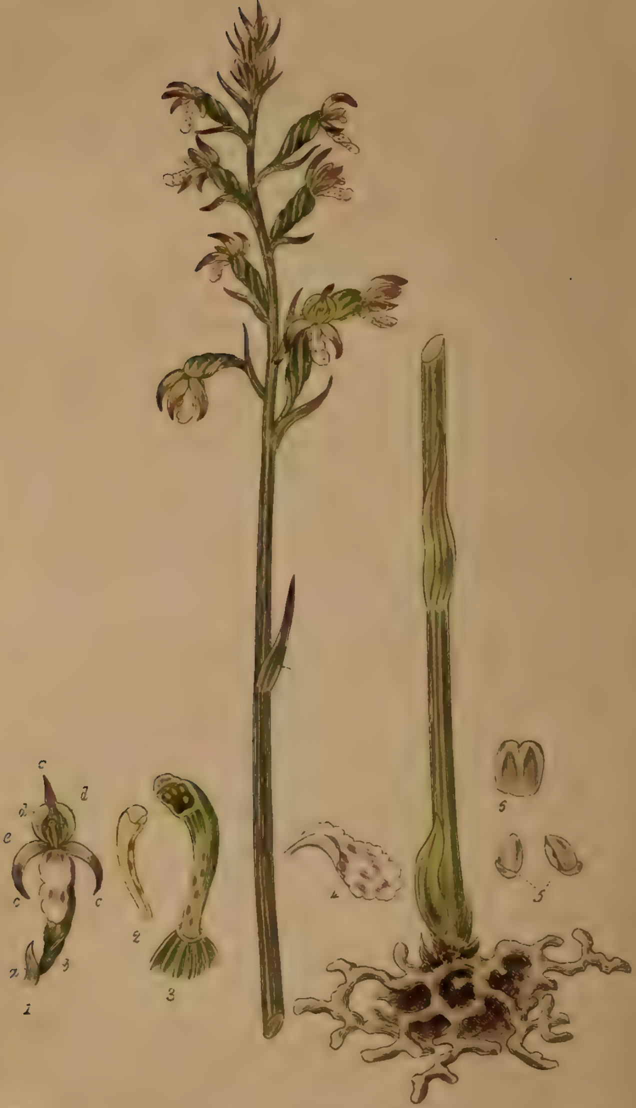
THE SUMMER'S CALL.

"Come away! the sunny hours
Woo thee far to founts and bowers!
O'er the very waters now,
In their play,
Flowers are shedding beauty's glow—
Come away!
Where the lily's tender gleam
Quivers on the glancing stream—
Come away!

All the air is filled with sound,
Soft, and sultry, and profound;
Murmurs through the shadowy grass
Lightly stray;
Faint winds whisper as they pass—
Come away;
Where the bee's deep music swells
From the trembling foxglove bells—
Come away!

In the deep heart of the rose
Now the crimson love-hue glows;
Now the glow-worm's lamp by night
Sheds a ray,
Dreamy, starry, greenly bright—
Come away!
Where the fairy cup-moss lies,
With the wild-wood strawberries,
Come away!

MRS. HEMANS.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Corallorrhiza innata Spurless Coral-root ♃

Russell Del
Pub^d by W Baxter, Botanic Garden, Oxford 1841
Jaiwar S:

CORALLORRHI'ZA*.

Linnean Class and Order. GYNA'NDRIA†, MONA'NDRIA.

Natural Order. ORCHI'DEÆ, *Linn.*—Juss. Gen. Pl. p. 64.—Sm. Gram. of Bot. p. 81.; Engl. Fl. v. iv. p. 3.—Lindl. Syn. p. 256; Introd. to Nat. Syst. of Bot. p. 262.—Rich. by Macgilliv. p. 412.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 274.—Macr. Man. Brit. Bot. p. 224.—Hook. Brit. Fl. (4th ed.) p. 425.—PALMARES; order, MUSALES; sect. ORCHIDINÆ; type, ORCHIDACEÆ; Burn. Outl. of Bot. v. i. pp. 391, 437, 458, & 461.

GEN. CHAR. *Perianthium*§ *(calyx and corolla)* (see fig. 1.) superior, more or less coloured. *Sepals* (fig. 1. *c, c, c.*) 3, spear-shaped, spreading, almost equal. *Petals* (fig. 1. *d, d.*) 2, oblong, or spear-shaped, ascending, nearly as long as the sepals. *Lip* (see figs. 1 & 4.) more or less lobed, producing from the base a spur, which is either prominent or not. *Anther* (fig. 1. *e.*) terminal, hemispherical, deciduous. *Pollen-masses* 4, waxy, oblique, not parallel. *Germen* (fig. 1. *b.*) inversely egg-oblong. *Column (style)* (figs. 2 & 3.) free, shorter than the petals, incurved, convex behind, channelled in front. *Stigma* obsolete, beneath the anther in front. *Capsule* elliptic-oblong. *Seeds* numerous, extremely minute, roundish, each with a long, lax, white, chaffy *tunic*.

The terminal, deciduous *anther;* the 4 waxy, stalkless *pollen-masses;* the *lip* with a minute spur, either adnate with the germen, or free; and the plano-convex, entire *column;* will distinguish this from other genera in the same class and order.

One species British.

CORALLORRHI'ZA INNA'TA. Innate Coral-root. Spurless Coral-root. Coral-rooted Twayblade. Little Lungwort.

SPEC. CHAR. Spur of the nectary so short as to be apparently wanting, combined with the germen. Root copiously branched.

Hook. Fl. Lond. t. 142.—Brown in Ait. Hort. Kew. (2nd ed.) vol. v. p. 209.—Hook. Fl. Scot. p. 255.—Sm. Engl. Fl. v. iv. p. 49.—Gray's Nat. Arr. v. ii. p. 215.—Lindl. Syn. p. 258.—Hook. Brit. Fl. p. 380.—Macr. Man. Brit. Bot. p. 230.—Grev. Fl. Edin. p. 187.—Irv. Lond. Fl. p. 278.—*Cymbidium corallorrhiza*, Swartz's Gen. et Spec. Orchidearum, p. 77.—Willd. Sp. Pl. v. iv. pt. I. p. 109.—*Ophrys corallorrhiza*, Engl. Bot. t. 1547.—Fl. Dan. t. 451.—Linn. Sp. Pl. p. 1339; Lapland Tour, v. i. p. 222. f. 223.—Huds. Fl. Angl. (2nd ed.) p. 388.—Sm. Fl. Brit. v. iii. p. 932.—Lightf. Fl. Scot. v. i. p. 523. t. 23.—*Orobanche radice coralloide*, Bauh. Pin. p. 88.—Rudb. Elys. v. ii. p. 231. f. 9.—*O. sueonum, radice coralloides, flore albo*, Rudb. Elys. v. ii. p. 234. f. 16.—*Dentaria coralloide radice*, Clus. Hist. v. ii. p. 120, with a figure.—Besl. Hort. Eyst. Æstiv. Ord. 4. t. 4. f. 4.—*Dentaria minor*, Johnson's Gerarde, p. 1585, with a figure.

Fig. 1. Front View of a Flower; *a.* bractea; *b.* germen; *c, c, c.* sepals; *d, d.* petals; *e.* column.—Fig. 2. Side view of the Column.—Fig. 3. Front view of the Column, and upper part of the Germen.—Fig. 4. The Lip.—Fig. 5. Pollen.—Fig. 6. Anther, with the cells empty.—*All more or less magnified.*—The plant is figured from a specimen in the *Sherardian Herbarium;* the dissections are copied from Sir W. J. HOOKER's beautiful work, the *Flora Londinensis.*

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* From *corallion*, Gr. *coral;* and *riza*, Gr. a *root;* alluding to the curious structure of the root, like coral.

† See fol. 8, note †. ‡ See fol. 387, *a.* § See fol. 33, note ‡.

LOCALITIES.—Marshy woods in Scotland, rare.—*Ayrshire;* Sandy places near the sea close by Ayr: Mr. GOLDIE.—*Edinburghsh.* Fir-wood at the end of Ravelrig Marsh, very abundant: Mr. J. MACNAB, in N. B. G. And among the willows: Mr. H. C. WATSON, in N. B. G. In a peat-bog among willows, a little to the south of Dalmahoy Hill, nine miles from Edinburgh: Mr. E. J. MAUGHAN.—*Fifeshire;* Near Dunfermline: Mr. W. BRAND, in N. B. G.—*Forfarshire;* Sands of Berrie: Mr. T. DRUMMOND.—*Perthshire;* Formerly found in the woods of Methven Castle: N. B. G.—*Ross-shire;* In a moist hanging wood, on the south side near the head of Little Loch Broom: LIGHTFOOT.

Perennial.—Flowers from June to September.

Root of many thick, fleshy, pale-brown or yellowish, short, blunt fibres, which are branched like coral, the branches distinct, not touching each other. *Leaves* none. *Scape* solitary, upright, from 6 inches to a foot high, round, striated, smooth, of a pale brownish-yellow colour, furnished with about three distant, tubular, loosely sheathing scales of the same hue. *Flowers* few, in a loose terminal spike or cluster, drooping at first, of a pale yellowish colour. *Bracteas* small, egg-spear-shaped, greenish. *Peduncles* very short, curved, finally upright. *Germen* (fig. 1. *b.*) smooth, incurved, bluntly angular. *Sepals* (fig. 1. *c, c, c.*) spear-shaped, spreading, greenish with a tinge of red. *Petals* (fig. 1. *d, d.*) spear-shaped, pale yellow, often reddish at the points, converging under the upper sepal. *Lip* (see figs. 1 & 4.) curved downwards, inversely egg-shaped, or oblong, with a slight contraction in the middle, below which, towards the base, are two shallow rounded lobes, the whole white or pale yellow, more or less spotted with red. *Spur* not apparent, or so short as to be altogether adnate with the lip. *Column* (fig. 1, *e.* and figs. 2 & 3.) elongated, strap-shaped, convex at the back; channelled in front; of a yellowish colour; crowned with the vertical *anther* (fig. 6.) in the form of a lid, and attached behind as by a hinge. *Pollen-masses* (fig. 5.) 2 in each cell, egg-shaped, pale green, placed obliquely, of a waxy consistency. *Stigma* almost square, covered by the anther. *Capsule* elliptical, with 3 blunt ribs, and crowned with the permanent withered flower. See *Sm. Engl. Fl.* and *Hook. Fl. Lond.*

This is one of the most rare, as well as one of the most singular of the British Orchideous plants. It is said to be a native of Switzerland, Carniola, and the south of France; but it has been found nowhere in these islands except in Scotland.

The first time LINNÆUS met with this rare and curious plant in a living state, was on the 19th of June, 1732, old style, in the island of Longoen, three miles from Old Pithoea, in Lapland; it was growing under a Spruce Fir, and was at that time in full bloom. It appears, from the *Flora Lapponica,* not to be very unfrequent in that country.

The plant seems to admit of some curious varieties; Mr. WOODWARD describes a specimen, in his possession, in which the lower sheath terminates in a real spear-shaped leaf, upright, somewhat approaching, half an inch long, two lines broad; and above this two others which are shorter. And we are informed by Dr. GREVILLE, in his *Flora Edinensis,* p. 187, that he possesses a highly curious monstrosity of this plant from Ravelrig-toll, near Edinburgh, in which all the flowers on one individual, have the 2 outer of the 3 upper connivent segments of the perianth converted into lips, as large as the true lip, deflexed, and beautifully spotted; the 3 remaining segments appearing between them like a 3-leaved calyx, and the column of fructification standing in the centre wholly unprotected, and terminated by the anther.

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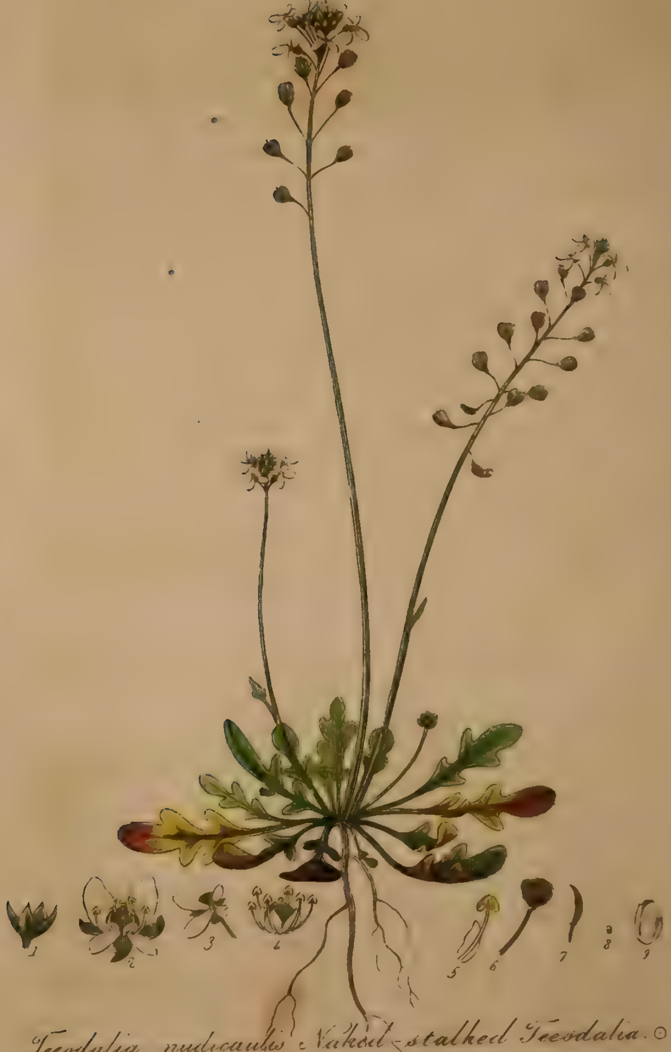

Teesdalia nudicaulis Naked-stalked Teesdalia. ⊙

Mathews delt & Sc

Pubd by W Baxter Botanic Garden Oxford 1841

TEESDA'LIA *.

Linnean Class and Order. TETRADYNA'MIA †, SILICULO'SA ‡.

Natural Order. CRUCI'FERÆ §, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. PLEURORHIZEÆ ||; tribe, THLASPIDEÆ; Lindl. Syn. pp. 20, 22, & 27.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 148.—Mack. Fl. Hibern. pt. I. p. 16.—Hook. Brit. Fl. (4th edit.) p. 397.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, equal at the base, of 4 spreading, egg-shaped, concave, nearly equal, deciduous sepals. *Corolla* (see fig. 2.) of 4 inversely egg-shaped, entire, spreading, equal, or unequal, petals, the 2 outermost in the latter case much the largest. *Filaments* (see figs. 2, 4, & 5.) 6, sometimes but 4, cylindrical, shorter than the corolla, incurved, each having a little petal-like scale within at the base (see fig. 5). *Anthers* of 2 round, distinct, converging lobes. *Germen* (see fig. 4.) roundish, 2-lobed, rather compressed. *Stigma* globular, sessile. *Pouch (silicula)* (see fig. 6.) transversely compressed, roundish, concave on one side; bordered at the summit and notched; of 2 cells, and 2 boat-like valves, with dilated keels; partition [dissepiment] (fig. 7.) spear-shaped, narrow, contrary to the greater diameter of the pouch. *Seeds* (fig. 8.) 2 in each cell, roundish, compressed; cotyledons nearly orbicular, accumbent (o=).

The emarginate *pouch*, with keeled *valves*, and 2-seeded *cells*; and the *filaments* each with a little scale within at the base; will distinguish this from other genera, with accumbent cotyledons, in the same class and order.

One species British.

TEESDA'LIA NUDICAULIS. Naked-stalked Teesdalia. Heath-cress. Shepherd's Cress. Small Shepherd's Purse.

SPEC. CHAR. Petals unequal, outer ones largest.

Brown in Ait. Hort. Kew. (2nd ed.) v. iv. p. 83.—Sm. in Tr. of Linn. Soc. v. xi. p. 286.; Engl. Fl. v. iii. p. 170.—With. (7th ed.) v. iii. p. 765.—Hook. Brit. Fl. p. 296.; Fl. Scot. p. 194.—Fl. Devon. pp. 108 & 188.—Johnst. Fl. of Berw. v. i. p. 141.—Winch's Fl. of Northumb. & Durh. p. 43.—Walker's Fl. of Oxf. p. 184.—Perry's Pl. Varvic. Sel. p 53.—Pampl. Pl. of Battersea, p. 11.—Dick. Fl. Abred. p. 45.—Bab. Prim. Fl. Sarn. p. 6.—Irv. Lond. Fl. p. 162.—Luxf. Reig. Fl. p. 57.—

Fig. 1. Calyx.—Figs. 2 & 3. Separate Flowers.—Fig. 4 Stamens, Pistil, and petal-like Scales.—Fig. 5. A separate Stamen, with its accompanying Scale—Fig. 6. A Pouch, with its fruit-stalk.—Fig. 7. Partition.—Fig. 8. Seed.—Fig. 9. The accumbent Cotyledons.—*All*, except figs. 6 & 8, *more or less magnified.*

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[*] So named by Dr. ROBERT BROWN, in honour of the late Mr. ROBERT TEESDALE, F. L. S., formerly gardener to the Earl of Carlisle, at Castle Howard, Yorkshire, an excellent British Botanist, who died at Turnham Green, near London, December 25, 1804.

[†] See f. 38, n. †. [‡] See f. 107, n. ‡. [§] See f. 38, *a*. [||] See f. 141, n. ||.

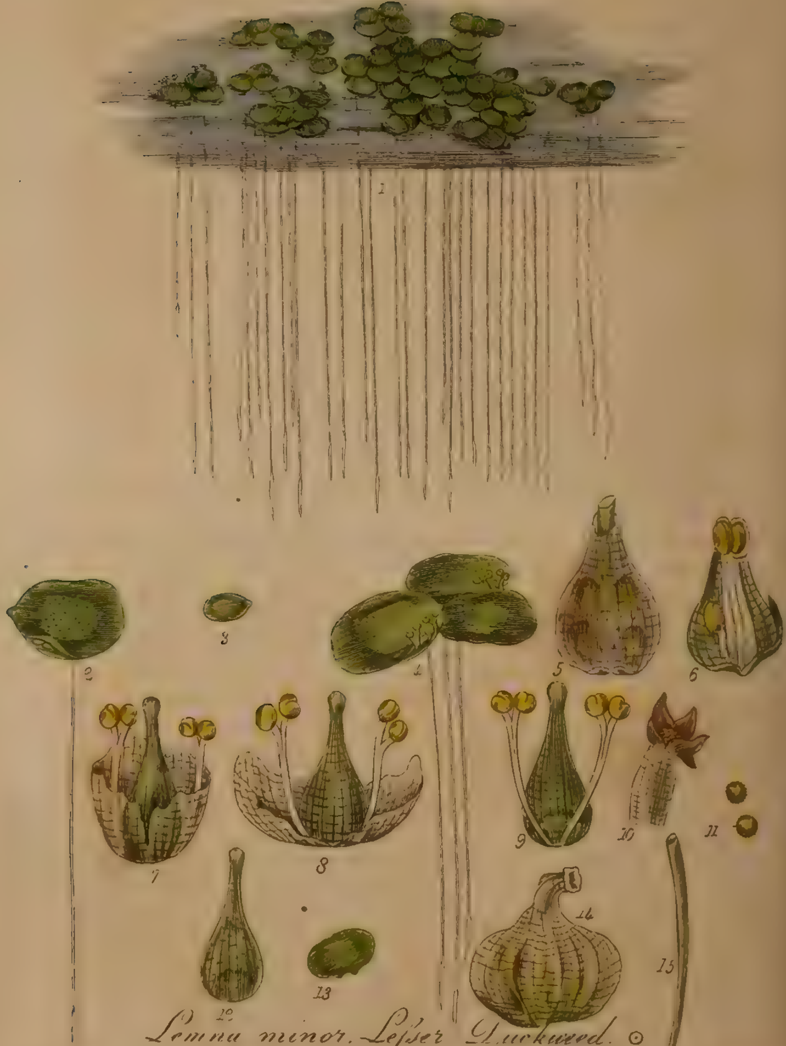
Baines' Fl. of Yorksh. p. 10.—Leight. Fl. of Shropsh. p. 311.—*Teesdalia Iberis*, Dec. Syst. v. ii. p. 392.—Lindl. Syn. p. 28.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 193.—Macr. Man. Brit. Bot. p. 18.—*Teesdalia irregulàris*, Gray's Nat. Arr. v. ii. p. 693.—*Iberis nudicaulis*, Engl. Bot. t. 327.—Curt. Fl. Lond. t. .—Fl. Dan. t. 323.—Linn. Sp. Pl. p. 907.—Huds. Fl. Angl. (2nd ed.) p. 285.—Willd. Sp. Pl. v. iii. pt. i. p. 458.—Sm. Fl. Brit. v. ii. p. 692.—With. (5th ed.) v. iii. p. 712.—Lightf. Fl. Scot. v. i. p. 346.—Abbot's Fl. Bedf. p. 141.—Davies' Welsh Bot. p. 63.—Purt. Midl Fl. v. i. p. 301.—Relh. Fl. Cant. (3rd ed.) p. 263.—*Thlaspi nudicaule*, Dec. Fl. Fr. (3rd ed.) v. iv. p. 708.—*Nasturtium petræum*, Ray's Syn. p. 303.—*Bursa pastoria minima*, Johnson's Gerarde, p. 276.—*Shepherd's Cress*, Petev. H. Brit. t. 50. f. 2.

Localities.—In dry, barren, gravelly, and sandy fields, and margins of gravel-pits, &c.—Frequent in many counties of ENGLAND, WALES, and SCOTLAND, especially in the following:—*Beds; Berks; Bucks; Cambridge; Cheshire; Cumberland; Derby; Devon; Essex; Hants; Leicester; Middlesex; Norfolk; Northampton; Northumberland; Notts; Salop; Stafford; Suffolk; Surrey; Sussex; Warwick; Westmoreland; Worcester; York;—Anglesea; Denbigh; Glamorgan; Montgomery;—Aberdeen; Ayr; Berwick; Elgin; Forfar; Lanark; Perth;* and *Roxburgh*.—It has not, I believe, been found in IRELAND.

Annual.—Flowers in May and June.

Root slender, tapering, with whitish fibres. *Stems* several, from 2 to 5 inches high, upright or spreading, slightly leafy, the central one quite straight, and always naked. *Leaves* numerous, spreading on the ground, almost entirely radical, partly undivided, but mostly pinnatifid in a lyrate manner, segments rounded, often slightly hairy at the edges, otherwise smooth. *Flowers* small, white, in a terminal corymb, which elongates into a spike-like raceme as it advances in flowering. *Sepals* egg-spear-shaped, concave, equal, reddish. *Petals* unequal, the two outer thrice the size of the other two. *Stamens* always 6, remarkable for their large white scales (see fig. 5), which were first observed in this species by the late Mr. Sowerby. *Pouch (silicle)* (see fig. 6.) somewhat inversely heart-shaped, laterally compressed, concave on one side, convex on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. *Valves* keeled, smooth, veiny. *Seeds* 2 in each cell, round, compressed, very minutely dotted.

There is another species, the *Teesdalia regularis* of Smith, *(Lepidium nudicaule* of Linnæus,*)* which is said so precisely to resemble our plant in habit, as to have been sometimes confounded with it; but it may be readily distinguished by its *petals* being equal, and by its having usually only 4 *stamens*, very rarely 6. It is, moreover, entirely exotic, having never been found wild in Britain, but appears to be confined to the south of Europe, where it inhabits sandy, barren, somewhat wooded places, especially in Spain and Portugal. Our plant, on the contrary, is found only in the more northern parts of Europe, as in Britain, France, Germany, Denmark, and Sweden.—Some interesting observations, by the late Sir J. E. Smith, relating to the history, &c., of these two curious little plants, may be seen in the 11th volume of *The Transactions of the Linnean Society of London*, p. 283 to 287.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Lemna minor. Leſser Duckweed. ⊙

[illegible] Pub.d by W. Baxter Botanic Garden, Oxford 1841 Mathews Sc

LEMNA[*].

Linnean Class and Order. MONŒ'CIA[†], DIA'NDRIA[‡].

Natural Order. PISTIACEÆ, *Richard.*—Lindl. Syn. p. 251.: Introd. to Nat. Syst. of Bot. p. 291.—Mack. Fl. Hibern. p. 268.—Hook. Brit. Fl. (4th ed.) p. 423.—LEMNACEÆ, Dec. and Duby. in Bot. Gal. p. 532—.Macr. Man. Brit. Bot. p. 277.—AROIDEÆ, sect. 3. PISTIACEÆ; Rich. by Macgilliv. pp. 388 & 389.—Hook. Fl. Scot. pt. II. p. 191.—NAIADES, Juss. Gen. Pl. p. 18.—Sm. Gram. of Bot. p. 66.—FLUVIALES, Loud. Hort. Brit. p. 541.—JUNCALES; sect. ACORINÆ, or AROIDEÆ; type, LEMNACEÆ; Burn. Outl. of Bot. v. i. pp. 404, 408, & 411.—MISCELLANEÆ, *Linn.*

GEN. CHAR. *Spatha* (see figs. 5 to 8.) thin, membranous, inflated, containing one *sterile* and one *fertile flower*, each destitute of both calyx and corolla. *Sterile Flower* of 1 or 2 stamens only. *Filaments* thread-shaped, longer than the spatha. *Anthers* of 2 globular distinct lobes, splitting at the top. *Fertile Flower* (fig. 12.) a pistil only. *Germen* egg-shaped. *Style* cylindrical, short. *Stigma* simple, blunt. *Utricle* (fig. 14.) indehiscent, of 1 cell, with 1 or more seeds. *Seeds* erect or horizontal. *Fronds* lenticular, without distinct stem or leaves; and producing the flowers from a marginal fissure (see fig. 4).

The naked *flowers*, inclosed in a membranous, inflated *spatha*, included in a marginal fissure of the lenticular floating frond, will distinguish this from other genera in the same class and order.

Four species British.

LEMNA MINOR. Lesser Duck-weed. Common Duck-meat. Greeds.

SPEC. CHAR. Fronds opaque, nearly egg-shaped, flattish above and beneath. Roots solitary.

Engl. Bot. t. 1095.—Hook. Fl. Lond. t. 120.—Fl. Dan. t. 1087.—Linn. Sp. Pl. p. 1376.—Huds. Fl. Angl. (2nd ed.) p. 399, *a*.—Willd. Sp. Pl. v. iv. pt. I. p. 194.—Sm. Fl. Brit. v. iii. p. 957.; Engl. Fl. v. i. p. 32.—With. (7th edit.) v. ii. p. 49.—Gray's Nat. Arr. v. ii. p. 729.—Lindl. Syn. p. 252.—Hook. Brit. Fl. p. 12.—Macr. Man. Brit. Bot. p. 277.—Lightf. Fl. Scot. v. ii. p. 537.—Sibth. Fl. Oxon. p. 14.—Abbot's Fl. Bedf. p. 198.—Thomps. Pl. of Berwick, p. 91.—Davies' Welsh Bot. p. 83.—Purt. Midl. Fl. v. ii. p. 437.—Relh. Fl. Cant. (3rd ed.) p. 374.—Hook. Fl. Scot. p. 11.—Grev. Fl. Edin. p. 6.—Fl. Devon. pp. 4 & 114.—Johnst. Fl. of Berw. v. i. p. 9.—Winch's Fl. of Northumb. & Durh. p. 2.—Walker's Fl. of Oxf. p. 7.—Burn. Outl. of Bot. v. i. p. 412.—Loud. Mag. Nat. Hist. v. i. p. 290. f. 155.—Bab. Fl. Bath. p. 60.; Prim. Fl. Sarn. p. 99.—Murr. North. Fl. p. 20.—Dick. Fl. Abred. p. 20.—Irv. Lond. Fl. p. 84.—Luxf. Reig. Fl. p. 3.—Cow. Fl. Guide, p. 36.—Baines' Fl. of Yorksh. p. 98.—Leight. Fl. of Shropsh. p. 14.—Mack. Catal. of Pl.

Fig. 1. Plant natural size.—Figs. 2 & 3. Proliferous and Gemmiferous Plants.—Fig. 4. Flowering Plants.—Fig. 5. Unruptured Spatha, containing the flowers.—Fig. 6. The same Flowers, more advanced.—Fig. 7. Flowers of which the spatha has burst.—Fig. 8. Spatha opened artificially.—Fig. 9. Sterile and Fertile Flower with the spatha removed.—Fig. 10. Anther whose cells have lost their pollen.—Fig. 11. Two grains of Pollen.—Fig. 12. A separate Fertile Flower.—Fig. 13. Ovule.—Fig. 14. Utricle.—Fig. 15. Calyptra-like extremity of a Root.—*All more or less magnified.*—Figs. 5, 6, 8, 10, & 14, from sketches by the Rev. Mr. SANDYS, the rest from Sir W. J. HOOKER's *Flora Londinensis.*

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[*] *Lemma* of the Greeks, it is said from *Lepis*, Gr. a *scale.*

[†] See fol. 83, n. †.

[‡] See fol. 50, n. ‡.

of Irel. p. 9.; Fl. Hibern. p. 269.—*Lenticula palustris vulgaris*, Vaill. Par. p. 114. t. 20. f. 3.—*Lenticularia media, et minor*, Mich. Gen. p. 16. t. 11. f. 2, 3.—*Lens palustris*, Ray's Syn. p. 129. t. 4. f. 1.—Johnson's Gerarde, p. 829.

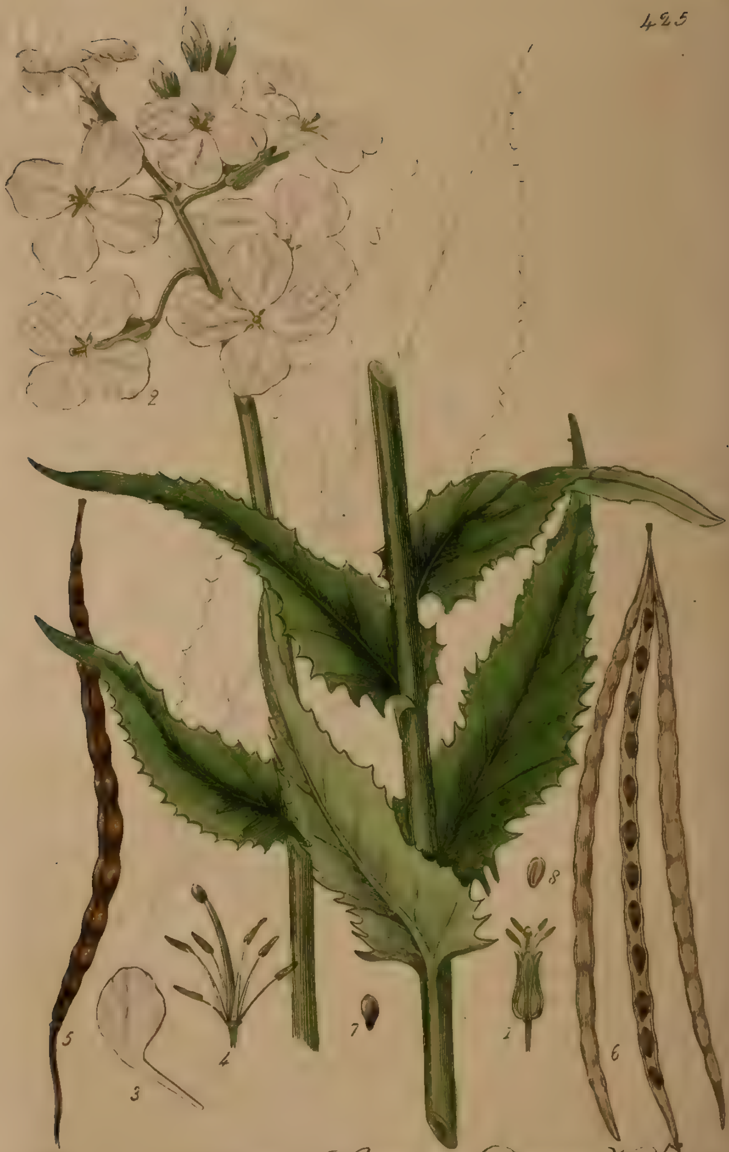
LOCALITIES.—In stagnant water in ponds and ditches, everywhere.

Annual.—Flowers in June and July.

Root a solitary fibre, with a calyptra-like extremity (see fig. 15). *Fronds* (see fig. 1.) numerous, collected together, floating on the surface of the water, egg-shaped or roundish, each about a line or a line and a half long, proliferous and gemmiferous (see fig. 2.), minutely cellular, nearly flat on the upper side, slightly convex on the under, with a depression in the centre, from whence the root proceeds. *Flowers* (see figs. 9 & 12.) monœcious, very minute, destitute of both calyx and corolla, and enclosed, 2 together (1 sterile and 1 fertile one), in a thin membranous, beautifully reticulated spatha or sheath, (see figs. 5 to 8.) which proceeds from a cleft in the margin of the frond towards the base (see fig. 4). *Sterile Flower* composed of 2 *stamens* only, their filaments thread-shaped, longer than the spatha, and terminated with a yellow *anther* of 2 distinct, globular lobes, which open at the top; *grains of pollen* (see fig. 11.) yellow, roundish, covered with small points. *Fertile Flower* (see fig. 12.) a *pistil* only, with an egg-shaped *germen*, a cylindrical, short *style*, and a blunt, flattish *stigma;* " a frond and 2 flowers thus constituting the whole of the plant." *Pericarpium* (see fig. 14.) a *utricle* of a roundish shape, somewhat depressed on one side, externally cellular, crustaceous within, terminated by the permanent style, which, according to the observations of the Rev. G. W. SANDYS, who favoured me with several sketches of the fructification of this little plant, in July, 1838, was always, in the specimens which he examined, bent at an angle. *Seed* solitary, horizontal, with its hilum directed towards the narrow end of the frond.

This species of *Ducks'-meat* is common in most parts of Europe. With us there is scarcely a pond or ditch of stagnant water, where it is not to be seen floating on the surface, and often increasing so rapidly by means of *gemmæ* or *buds* (see figs. 2 & 3.) produced from clefts in the margins of the fronds, as well as by seed, that it frequently becomes so crowded, as to form large dense masses, which entirety conceal the water on which they float. It is considered to possess the property of purifying the unwholesome air in marshy places, absorbing this air during the day, and exhaling oxygen during the night.—Ducks and geese are fond of it, and it affords nourishment and protection to a great variety of Infusoria and other interesting aquatic objects.—It appears to be very tenacious of life, as an instance is recorded of some plants of it being taken from a pond in July, 1797, dried for 4 or 5 hours in the sun, and then put into a small box and preserved, in a dry state, till the end of March, 1800; when they were placed in a glass jar with water, where they not only revived, but flowered in the following August. It also possesses great power in resisting decay, as is proved by a circumstance which came under the observation of that excellent naturalist, the Rev. W. T. BREE, of Allesley, near Coventry, and which is described in the 9th volume of LOUDON'S *Gardeners' Magazine*, p. 124.

The *Natural Order* PISTIACEÆ is composed of floating monocotyledonous frondose *plants*, with 2 naked *flowers*, inclosed in a *spatha*, and appearing from the margin of the frond. The *sterile flowers* consist of a definite number of stamens; the *fertile ones* of a 1-celled *ovary*, with one or more erect *ovules;* a short *style;* and a simple *stigma*. The *fruit* is membranous or capsular, indehiscent, and 1- or more-seeded. The *seed* has a fungus *testa*, a thickened indurated foramen; and the *embryo* either in the axis of a fleshy albumen, and having a lateral cleft for the emission of the *plumule*, or at the apex of the nucleus.—*Lemna* is the only British genus in the order.



Hesperis matronalis. Common Dame's Violet. ♃

Russell Del
Pub.d by W Baxter, Botanic Garden Oxford 1841
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HE'SPERIS *.

Linnean Class and Order. TETRADYNA'MIA †, SILICULO'SA ‡.

Natural Order. CRUCI'FERÆ §, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; suborder, NOTORHIZEÆ; tribe, SISYMBRIEÆ; Lindl. Syn. pp. 20, 21, & 29.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 149.—Mack. Fl. Hibern. pp. 16 & 23.—Hook. Brit. Fl. (4th edit.) pp. 397 & 398.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, SISYMBRIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 858.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 4, closely converging, oblong, blunt, deciduous sepals, overlaying each other at the upper part, separating first at the bottom; two opposite ones protuberant at the base. *Corolla* (fig. 2.) of 4, inversely egg-shaped, blunt, or slightly notched, obliquely spreading petals; with strap-shaped, channelled, upright claws, as long as the calyx (see fig. 3). *Filaments* (fig. 4.) 6, thread-shaped, upright, simple, the two shorter with a gland at their base internally. *Anthers* strap-shaped, recurved. *Germen* (see fig. 4.) 4-sided, strap-shaped, as long as the calyx. *Style* (see fig. 4.) scarcely any. *Stigma* nearly sessile, of 2 upright, closely converging, blunt, downy lobes. *Pod (silique)* (fig. 5.) 4-sided, or 2-edged, striated, protuberant from the seeds; valves (see fig. 6.) strap-shaped, undulated, pointed, the length of the membranous partition. *Seeds* (see figs. 6 & 7.) in a single row, pendulous, oblong, obscurely triangular, not bordered. *Cotyledons* (see fig. 8.) flat, incumbent (o||).

The upright *calyx;* the nearly sessile *stigma*, with 2 converging lobes; the 4-sided or 2-edged *pod;* and the flat, incumbent *cotyledons;* will distinguish this from other genera in the same class and order.

One species British.

HE'SPERIS MATRONA'LIS. Dames' Violet. Common Rocket. Damask Violets. Winter Gilliflowers. Queen's Gilliflowers. Rogues' Gilliflowers. Close-sciences.

SPEC. CHAR. Stem upright. Leaves egg-spear-shaped, toothed. Limb of the petals inversely egg-shaped. Pods upright, smooth, irregularly tumid, their margins not thickened.

Linn. Sp. Pl. p. 927.—Willd. Sp. Pl. v. iii. pt. I. p. 531.—Brown in Ait. Hort. Kew. (2nd ed.) v. iv. p. 122.—De Cand. Syst. v. ii. p. 450.—Sm. Engl. Fl. v. iii. p. 207.—With. (7th ed.) v. iii. p. 778.—Lindl. Syn. p. 29.—Hook. Brit. Fl. p. 307.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 203.—Macr. Man. Brit. Bot. p. 19.—Lightf. Fl. Scot. v. ii. p. 1136.—Hook. Fl. Scot p. 202.—Grev. Fl. Edin. p. 146.—Phill. Fl. Hist. (2nd ed.) v. i. p. 318.—Johnst. Fl. of Berw. v. ii. p. 285.—Winch's Fl. of Northumb. and Durh. p. 44.—Walker's Fl. of Oxf. p. 192.—Bab. Fl. Bath.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A Petal.—Fig. 4. Stamens and Pistil.—Fig. 5. Pod —Fig. 6. Pod with valves separated.—Fig. 7. A Seed.—Fig. 8. Seed with the testa removed.

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[*] From *hesperos*, Gr. the *evening;* because the flowers of most of the species are sweet-scented in the evening.

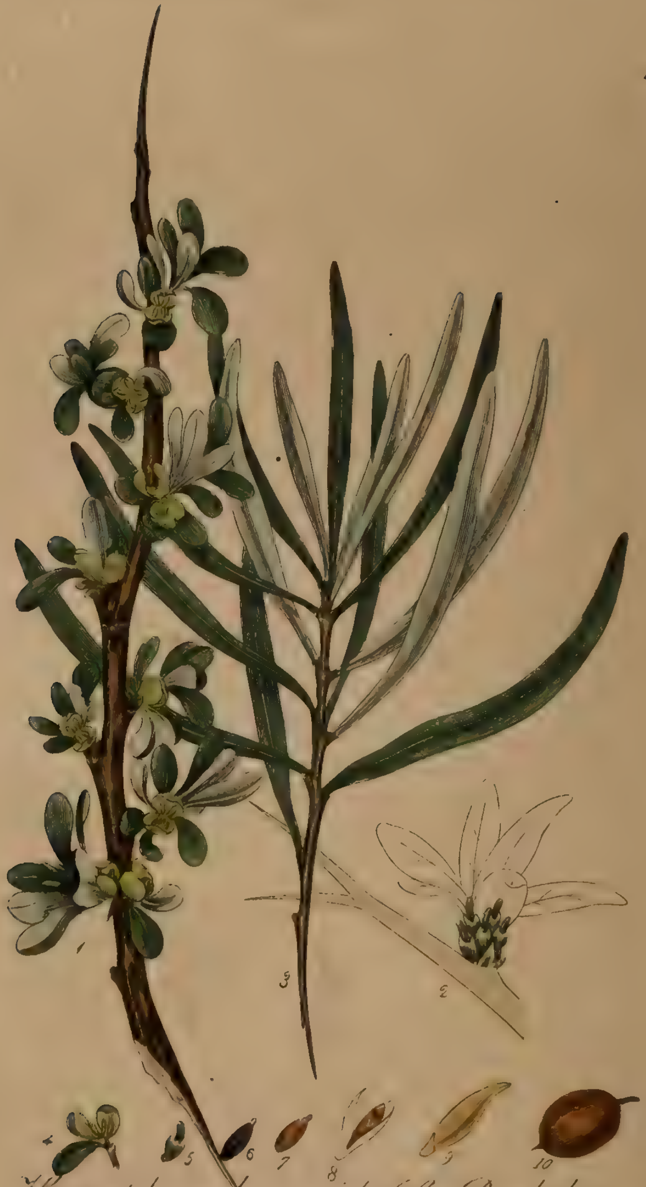
[†] See folio 38, note †. [‡] See folio 62, note ‡. [§] See folio 38, *a.*

Suppl. p. 70.—Irv. Lond. Fl. p. 165.—Luxf. Reig. Fl. p. 59 —Baines' Fl. of Yorksh p. 13.—Leight. Fl. of Shropsh. p. 314.—Mack. Fl. Hibern. p. 23 —*Hesperis inodora*, Linn. Sp. Pl. p. 927.—Huds. Fl. Angl. (2nd ed.) p. 288.—Willd. Sp. Pl. v. iii. pt. i. p. 531.—Engl. Bot. t. 731.—Fl. Dan. t. 924.—Jacq. Austr. t. 347.—Sm. Fl. Brit. v. ii. p. 711.—With. (5th ed.) v. iii. p. 726.—Gray's Nat. Arr. v. ii. p. 682.—*Hesperis sylsestris inodora*, Dill. in Ray's Syn. p. 293.—*H. pannonica inodora*, Bauh. Hist. v. ii. p. 878, with a figure.—*Viola matronalis*, Johns. Gerarde, p. 462.

Localities.—In coppices, hedges, and hilly pastures, especially near rivulets, but rare.—*Oxfordshire.* Plentiful in the wood near the Cottages at Nuneham Courtney: Mr. W. Moore.—*Cornwall;* About Falmouth: Withering.—*Cumberland;* Banks of rivulets about Dale Head: Ray.—*Derbysh.* Banks of the Derwent, near Matlock: D. Turner, Esq. Road-side above Edensor, near to a farm-house; and in a field by the road-side between Castleton and Egam: N. B. G.—*Durham;* In meadows near Chester-le-streat: N. J. Winch, Esq.—*Gloucestersh.* On Coteswould Ridge, by the road-side between Frogmill and Cheltenham: B. G. Dowdeswell Woods, near Cheltenham: Rev. E. F. Witts. St. Ann's Wood, near Bristol: N. B. G. Banks of the Ouse, near Fairford: G. Woodward, Esq. Bicester.—*Hants;* In two or three places near Selborne: Mr. W. Pamplin, jun.—*Kent;* In a field near Mount Pleasant, probably escaped from the garden: N. B. G.—*Norfolk;* Goldisthorpe, near Lynn, in a wood that had formerly been cultivated ground: *ibid*—*Northumberland;* Hulne Abbey Woods; and in the Duke of Northumberland's woods and plantations about Alnwick: N. B. G.—*Notts;* Colwick Park; Wilderness at Colwick; Clifton Hill: N. B. G.—*Shropsh.* At Coermaen, near Aston near Oswestry; naturalized: *Fl. Shrop.*—*Somerset;* Woods at Colerne and Farley Castle: Mr. T. B. Flower.—*Suffolk;* Once found near Browston Hall: B. G.—*Surrey;* Wood on the right hand side of the road about half way from Leatherhead to Dorking: B. G.—Coulsdon; below Box-hill; and in a hedge near a farm at Cheam, towards the Lord Nelson: N. B. G.—*Sussex;* At Southover, near Lewes: *ibid.*—*Westmoreland;* Banks of rivulets above Grasmere: B. G.—*Worcestersh.* Occuring sometimes, but obviously a garden outcast: N. B. G.—*Yorksh.* Clover-field near Kirby Fleetham: N. B. G. In Hellerby Wood, near Doncaster; in the road between Stackhouse and Stainforth, one mile north of Settle; in the road between Rilston and Colton, seven miles east of Settle; and near Aysgarth Bridge, Wensleydale: *Fl. of Yorksh.* Bolton Abbey Woods: Rev. E. F. Witts.—WALES. *Glamorgansh.* Among rubbish near the mouth of the Tarve: N. B. G.—*Pembrokesh.* In great abundance in a field on the top of the hill on Haverford West, side of Pembroke Ferry: B. G.—SCOTLAND. *Berwick;* In the bed of a rivulet between Burnhouses and Reston-mill: N. B. G.—*Edinburghsh.* Fields near the Hunter's Tryste; Debris of Salisbury Craigs; banks of Glencorse Burn; Colinton and Auchindenny Woods; banks below Arthur's Seat; and banks of the Water of Leith: N. B. G.—*Forfarsh.* On banks near Airly Castle: N. B. G.—*Lanarksh.* In the fields near Holytown; and in the plantation below Hamilton Bridge: N. B. G.—IRELAND. In a meadow close to Knocknahatna, near Oldcastle, county of Cavan: *Fl. Hib.*

Perennial.—Flowers in May and June.

Root fibrous, tufted. *Stem* from 1 to 3 feet high, simple or slightly branched, leafy, round, solid, hairy. *Leaves* scattered, egg-spear-shaped, or slightly heart-shaped, taper-pointed, toothed or serrated, clothed more or less with short bristly hairs; all nearly sessile, except some of the lowermost. *Flowers* large and handsome, purple, rose-coloured, or white, in a terminal spike-like bunch; fragrant in the evening and in rainy weather. *Calyx* upright; *sepals* pale pink, tipped with green, and rough with coarse spreading hairs. *Petals* inversely egg-shaped, with a long channelled claw, and a spreading, entire, or emarginate, limb. *Pod* two inches or more long, nearly upright, a little curved, pointed, of a slender cylindrical form, smooth, with 4 simple, not bordered angles, alternately elevated and depressed by the numerous *seeds*, which are elliptical, concave at one side, and destitute of a border.—Several varieties of this plant are cultivated in gardens; as the double white; the double variegated, &c.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Hippophæ rhamnoides. Sea Buckthorn. ♄

Russell Del. Pub^d by W. Baxter Botanic Garden Oxford 1841. Mathews Sc

(426.)

HIPPO'PHAE[*].

Linnean Class and Order. Diœ'cia[†], Tetra'ndria[‡].

Natural Order. Elæa'gneæ, A. *Rich.*—Lindl. Syn. p. 208.; Introd. to Nat. Syst. of Bot. p. 68.—Rich. by Macgilliv. p. 420.—Loud. Hort. Brit. p. 532.—Hook. Brit. Fl. (4th ed.) p. 417.—Macr. Man. Brit. Bot. p. 201.—Elæagna'ceæ, Loud. Arb. et Frutic. Brit. p. 1320.—Elæagni, Juss. Gen. Pl. p. 74.—Sm. Gr. of Bot. p. 86.—Querneales; sect. Laurinæ; type, Thymelæaceæ; subtype, Elæagnidæ; Burn. Outl. of Bot. v. ii. pp. 523, 563, 569, & 571.—Calycifloræ, *Linn.*

Gen. Char. *Sterile* and *Fertile Flowers* on two distinct plants (see figs. 1 & 2). Sterile Flowers. *Calyx* (see fig. 4.) in 2 deep, roundish, valve-like segments, at first folded flat together. *Corolla* none. *Anthers* sessile, strap-shaped, upright, of 2 cells, not longer than the calyx. Fertile Flowers. *Calyx* (see fig. 5.) of 1 sepal, inferior, tubular, cleft at the summit, permanent. *Corolla* none. *Germen* (see fig. 6.) superior, small, roundish. *Style* (see fig. 5.) short and thick. *Stigma* simple, oblong, protruding beyond the calyx. *Nut* (see figs. 8 & 9.) 1-seeded, surrounded by the enlarged, berry-like *calyx*. *Seed* (see figs. 6 & 7.) solitary, oblong, polished, with a furrow at each side.

The deeply-cloven *calyx* of the *barren flowers;* and the tubular, slightly-cleft *calyx;* and the 1-seeded *nut*, surrounded by the enlarged, coloured, berry-like *calyx* of the *fertile flowers;* will distinguish this from other genera, without a corolla, in the same class and order.

One species British.

HIPPO'PHAE RHAMNOIDES. Buckthorn-like Hippophae. Sea Buckthorn. Sallowthorn. Willowthorn.

Spec. Char. Branches each ending in a spine. Leaves strap-shaped, scattered, silvery and scaly on the under side.

Engl. Bot. t. 425.—Fl. Dan. t. 265.—Pall. Fl. Ross. v. i. t. 68.—Linn. Sp. Pl. p. 1452.—Huds. Fl. Angl. (2nd ed.) p. 431.—Willd. Sp. Pl. v. iv. pt. ii. p. 743.—Sm. Fl. Brit. v. iii. p. 1075.; Engl. Fl. v. iv. p. 238.—With. (7th ed.) v. ii. p. 241.—Lindl. Syn. p. 208.—Hook. Brit. Fl. p. 435.—Loud. Arb. et Frutic. Brit. p. 1324. f. 1206.—Macr. Man. Brit. Bot. p. 202.—Rev. G. E. Smith's Pl. of S. Kent. p. 66.—Irv. Lond. Fl. p. 125.—Baines' Fl. of Yorksh. p. 85.—*Hippophae littoralis*, Salisb. Prod. p. 71.—Gray's Nat. Arr. v. ii. p. 264.—*Rhamnoides fructifera, foliis Salicis, baccis leviter flavescentibus*, Ray's Syn. p. 445.—Blackst. Spec. Bot. p. 83.—Jacob. Pl. Fav. p. 96.—*Rhamnus secundus*, Clus. Hist. v. i. p. 110.—Johnson's Gerarde, p. 1334.

Localities.—Sand-hills and cliffs upon the coast of the East and South-east of England.—*Essex;* Near Convey Island: Mr. Hill, in *Blackst. Sp. Bot.*—*Kent;* In a Salt-marsh two miles from Sheerness: *ibid.* Abundant between

Fig. 1. Portion of a Sterile Plant.—Fig. 2. Ditto of a Fertile one.—Fig. 3. A Branch in leaf.—Fig. 4. A Sterile Flower, with a young leaf.—Fig. 5. A Fertile one.—Figs. 6 & 7. Seeds.—Fig. 8 & 9. Nuts.—Fig. 10. A Berry, formed of the enlarged, fleshy calyx, and enclosing the nut.

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[*] From *ippos*, Gr. a *horse;* and *phao*, Gr. to *brighten;* but why so called cannot be determined. Hooker.

[†] See fol. 143, note †. [‡] See fol. 46, note †.

Folkstone and Sandgate, undercliff; and a little West of St. Margaret's Bay, by Dover: L. W. DILLWYN, Esq. In Shepey; and near Sandown Castle, plentifully: E. JACOB, Esq. Below the church at Folkstone, upon the Green Sand; upon the chalk, at Lydden Spout; and upon sand, east of Deal: Rev. G. E. SMITH.—*Lincolnsh.* At Skegness, on the beach near the sea: Rev. G. CRABBE. Sea-banks on Lindsey coast, plentifully: Dr. LISTER, in *Ray's Syn.*—*Norfolk*; Plentifully between Yarmouth and Cromer; and between Cromer and Mundesley: Sir J. E. SMITH. On Cley and Sheringham Cliffs: Mr. CROWE. Sandhills at Hemsby: Mr. WIGG. Ormesby; J. PAGET, in N. B. G. Marrams, Caistor, and Hemsby, abundant: N. B. G.—*Yorksh.* On the sea-bank between Whitby and Lythe, plentifully: RAY. Cliffs between Whitby and Land's End: Mr. BAINES, in *Fl. of Yorksh.*

Shrub.—Flowers in April and May.

A bushy rigid *Shrub*, from 5 to 8, or 10 feet high, in a wild state; with numerous, irregular, spreading, leafy branches, covered with a brown scaly bark, and each terminating in a *thorn.* *Leaves* numerous, scattered, deciduous, strap-spear-shaped, bluntish, very entire, an inch and a half, or nearly two inches long, and about a quarter of an inch broad, on very short petioles; dark green on the upper surface, with circular, silvery, scale-like dots, each accompanied by a tuft of white radiating hairs, which, viewed under the microscope, greatly resemble *Erysiphe adunca*, so beautifully figured by Dr. GREVILLE, in his *Scottish Cryptogamic Flora*, t. 296.; under surface of a shining silvery-white, with scattered tufts of hair similar to those on the upper. *Flowers* green, very small, in the bosoms of the leaves while very young (see figs. 1 & 2). *Fruit* (fig. 10.) berry-like, formed of the enlarged, permanent, fleshy calyx, somewhat stalked, rather elliptical, orange-coloured, very acid, with an austere vinous flavour.

This plant is a native on sandy sea-coasts in many other parts of Europe as well as in England; but it has not been found wild either in Wales, Scotland, or Ireland. It is often cultivated in gardens on account of the beauty of its grey, silver-looking foliage. Every part of the plant abounds in colouring matter, which is used as a yellow dye. The berries afford a kind of sauce to the poor in Sweden and the south of France. They are a favourite food with the Tartars, who make a jelly or preserve of them, and serve them up with milk or cheese, as great dainties; and the fishermen in the Gulf of Bothnia eat them with their fish. They are entirely harmless, although in Dauphiny and Spain they are considered poisonous. J. J. ROSSEAU gives an account of his having made a botanical excursion in the neighbourhood of Grenoble, with a local botanist, who, though he saw him eating the fruit, which he believed to be poisonous, was so polite, or regarded ROSSEAU with so much respect, that he durst not presume to warn him of his danger; and was astonished that death did not ensue when he saw him eat the berries so plentifully.

The *Natural Order* ELÆAGNEÆ is composed of dicotyledonous *shrubs* or *trees*, with entire, extipulate *leaves*, which are covered, as well as the bark, with minute silvery scales. Their *flowers* are apetalous, and mostly diœcious. The *sterile flower* consists of a 2- or 4-parted *calyx*, and 3 or more *stamens*, with 2-celled *anthers.* The *fertile flower* has an inferior, tubular, permanent *calyx*, with an entire, or 2- to 4-toothed limb. The *ovary* is 1-celled, with a solitary *ovule.* The *fruit* is crustaceous, and enclosed within the calyx, which has become fleshy; and the *seed* is erect; with a straight *embryo*, surrounded by very thin fleshy *albumen.*—HIPPOPHAE is the only British genus in the order.

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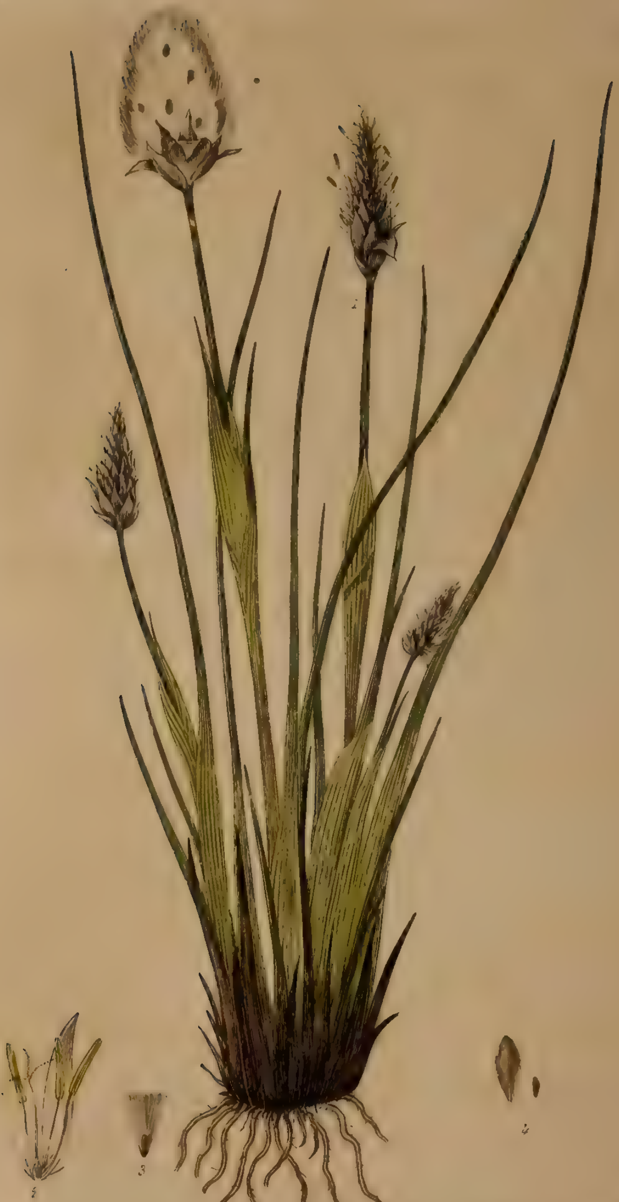

Eriophorum vaginatum. Sheathed Cotton-graſs. ♃

Mathews I d. & Sc

Pub.d by W Baxter Botanic Garden Oxford 1841

ERIO'PHORUM [*].

Linnean Class and Order. TRIA'NDRIA [†], MONOGYNIA.

Natural Order. CYPERA'CEÆ, *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—CYPEROIDEÆ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—CYPERALES; sect. CYPERINÆ; type, SCIRPACEÆ; Burn. Outl. of Bot. v. i. pp. 354 & 357.—CALAMARIÆ, *Linn.*

GEN. CHAR. *Spikes* (see fig. 1.) solitary and terminal, or fasciculate and bracteated, of numerous florets (see figs. 1 & 2.) all perfect. *Glumes* (see figs. 1 & 2.) imbricated in every direction, uniform, flat, mostly membranous and greyish, pointed, with 1 or 3 slender ribs, not awned; one or two of the lower ones sometimes sterile. *Corolla* none. *Filaments* (see fig. 2.) 3, hair-like. *Anthers* pendulous, prominent, strap-shaped. *Germen* (see fig. 3.) inversely egg-shaped, encompassed with numerous fine hairs [‡] from the *receptacle*, shorter than the *style*, but subsequently greatly elongated. *Style* (see fig. 2.) simple, entirely deciduous. *Stigmas* 3, downy. *Fruit* (see fig. 4.) 3-cornered, pointed.

Distinguished from other genera in the same class and order by the inferior chaffy *florets*; the single, nearly equal *glumes*, imbricated on all sides; and the *fruit* accompanied by long silky hairs.

Seven species British.

ERIO'PHORUM VAGINA'TUM. Sheathed Cotton-grass. Hare's-tail Cotton-grass. Moss Crops.

SPEC. CHAR. Stem triangular above; round below, with reticulated sheaths, the lower ones elongated into long bristle-like leaves, the upper ones leafless, inflated. Spike egg-shaped, solitary.

Engl. Bot. t. 873.—Curt. Fl. Lond. t. 219—Graves' Br. Grasses, t. 1.—Fl. Dan. t. 236.—Linn. Sp. Pl. p. 76.—Huds. Fl. Angl. (2nd ed.) p. 22.—Willd. Sp. Pl. v. i. pt. I. p. 312.—Sm. Fl. Brit. v. i. p. 58.; Engl. Fl. v. i. p. 66.—With. (7th ed.) v. ii. p. 98.—Gray's Nat. Arr. v. ii. p. 80.—Lindl. Syn. p. 282.—Hook. Brit. Fl. p. 25.—Macr. Man. Br. Bot. p. 246.—Lightf. Fl. Scot. v. i. p. 90.—Thomp. Pl. of Berw. p. 7.—Purt. Midl. Fl. v. i. p. 66.—Hook. Fl. Scot. p. 20.—Grev. Fl. Edin. p. 12.—Sincl. Hort. Gram. Woburn. p. 358.—Fl. Devon. pp. 9 & 114.—Johnst. Fl. of Berw. v. i. p. 16.—Winch's Fl. of Northumb. and Durh. p. 4.—Walker's Fl. of Oxf. p. 14.—Perry's Pl. Varvic. Selectæ, p. 6.—Murr. North. Fl. p. 36.—Dick. Fl. Abred. p. 22.—Irv. Lond. Fl. p. 218.—Baines' Fl. of Yorksh. p. 111.; Leight. Fl. of Shropsh. p. 30.—Mack. Catal. Pl. of Irel. p. 11.; Fl. Hibern. p. 323.—*Eriophorum cæspitosum*, Host. Gram. Austr. v. i. p. 30. t. 39.—Schrad. Germ. v. i. p. 150.—*Juncus alpinus cum cauda leporina*, Bauh. Hist. v. ii. p. 514, with a figure.—Ray's Syn. p 436.—*Juncus alpinns, capitulo lanuginoso*, Bauh. Prod. p. 23.; Theatr. p. 187. f. 188.—Scheuchz. Agr. p. 302. t. 7. f. 1, 2, 3.

Fig. 1. A spike of Flowers.—Fig. 2. Separate Flower, *magnified.*—Fig. 3. A Seed, with its accompanying tuft of hairs.—Fig. 4. Seed or Fruit, natural size, and magnified.

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[*] From *erion*, Gr. *wool*; and *phero*, Gr. to *bear*; the seeds being encompassed with long wool-like hairs.

[†] See folio 45, note †.

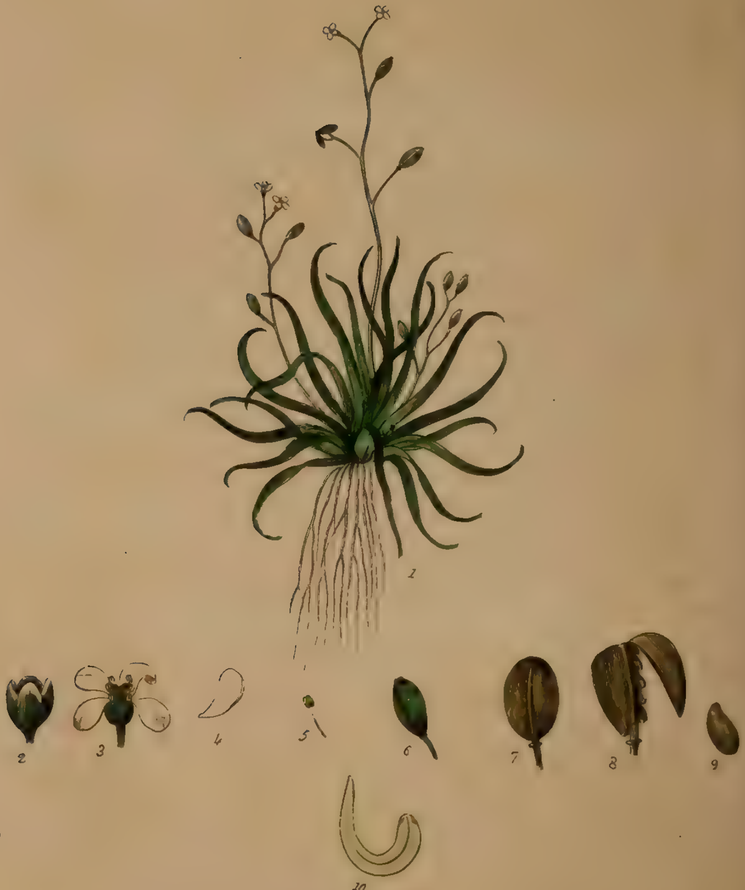
[‡] These hairs are, by some Botanists, considered as the true *perianth* (see fol. 33, note ‡), and are styled *perigynium*.

Localities.—On barren mountainous moors, and on turfy boggy heaths, not unfrequent, especially in the more northern counties.—*Oxfordsh* Marshes at Headington: Dr. Maton. Not found there now: W. B —*Cheshire;* On the moors above Stayley Wood, &c.: *Bot. Guide.—Cornwall;* On wet moors, not uncommon. Near Penzance, by the Cromlech: *ibid.* Mr. H. C. Watson believes he has seen it on the heath near Kynance Cove: see N. B. G.—*Cumberland;* On all the hills and peat-mosses in low grounds: B. G. Common among the hills, ascending to the top of Saddleback: N. B. G.—*Derbysh.* Hills behind Mam Tor from Castleton; near Pleasley; Combe's Moss: *ibid.—Devon;* Dartmoor Common; Haldon; and in bogs between Clovelly and Kilkhampton: *Fl. Devon.—Durham;* Turfy bogs, on moors, &c.: N. J. Winch, Esq.—*Kent;* On Waterdown Forest, near the place where the Aspidium Thelypteris grows: N. B. G.—*Lancash.* Blackstone Edge; Pillan Moss: B. G.—*Norfolk;* On Bawdsey Bottom near Lynn: B. G.—*Northumberl.* Turfy bogs, on moors. Prestwick Carr; and near Shewing Shields: N. J. Winch, Esq.—*Notts;* common: N. B. G.—*Shropsh.* Clee Hills; Ellardine Moss; near Ellesmere, abundantly; Hancott Bog; bog near Ellesmere; Felton Farm, near Ludlow; Bomere Pool, near Shrewsbury; Knockin Heath; and Vownog Bog, near Westfelton: *Fl. of Shropsh.—Somerset.* On Glastonbury, and Burtle Tuft-moors, abundantly: B. G.—*Surrey;* Leigh Hill Common, near Dorking; and boggy parts of Shirley Common, near Croydon: B. G.—*Sussex;* Amberley Wildbrooks, and neighbouring bogs; Broadwater Common near Tunbridge Wells: B. G. Mr. W. Pamplin, jun. doubts whether it has been found on Broadwater Common, of late years.—*Warwicksh.* Bannersley Pool; bog below Coleshill; Birmingham Heath, in the marshy valley, crossed by the footpath to Winson Green; and near Packington: N. B. G.—*Westmoreland;* common: B. G.—*Worcestersh.* rare: N. B. G.—*Yorksh.* On high barren moors. Cronkley Fell; Richmond; Blackmoor, near Leeds; Heath north-west of Terrington Carr; and on Black Bird Moor, both near Castle Howard; Tanfield Carr; bog in the Ox Close, near Ripon; near Beverley; Moors between Hambleton and Helmsley; Moors near Gearstones; on Cockit Moss and Helleth Moss, near Settle; and at the foot of Pennigent Hill: Baines' *Fl. of Yorksh.*—WALES. Frequent in the counties of *Brecknock; Carmarthen; Caernarvon; Denbigh; Flint; Glamorgan; Merioneth;* and *Monmouth.*—Not uncommon in Turf-bogs and barren Moors in SCOTLAND and IRELAND, especially in mountainous districts.

Perennial.—Flowers in March and April.

Root slightly creeping. *Culms (stems)* tufted, jointed, smooth, triangular at the top, round below, upright, shorter than the leaves when in flower, but finally becoming much longer, with several inflated, strongly reticulated sheaths in the lower part, one or two of them elongated into leaves. *Leaves* numerous, upright, slender, triangular, striated, sharp-pointed. *Spike* (see fig. 1.) solitary, terminal, somewhat acuminate, silvery-grey when in flower. *Glumes* (see fig. 2.) with long points, thin, membranous, shining, single-ribbed. *Anthers* prominent, yellow. *Fruit* triangular, rough with minutely elevated points.

This is an elegant grass, especially when in seed, at which time its spikes are very conspicuous, resembling tufts of the finest white silk or cotton. Sheep are said to be very fond of this grass, but its produce is very scanty; and Mr. Sinclair remarks, that as far as he had opportunity to observe, they only crop the foliage in the Spring, till the finer natural grasses afford them a bite. The long silky hairs which spring from the base of the fruit of this and some other species of the same genus, have been attempted to be manufactured into cloth, paper, &c., but from the brittleness of their texture most of the attempts have failed.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Subularia aquatica. Water Awl-wort. ♃

Ruſsell. Del   Pub.d by W. Baxter Botanic Garden Oxford. 1841   Mathews Sc

SUBULA'RIA[*].

Linnean Class and Order. TETRADYNA'MIA[†], SILICULO'SA[‡].

Natural Order. CRUCI'FERÆ[§], Juss Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. NOTORHIZEÆ[||]; tribe, LEPIDINEÆ; Lindl. Syn. (2nd. ed.) pp. 20, 21, & 30.—Hook. Brit. Fl. (4th ed.) pp. 397 & 398.—CRUCIFERÆ; subord. DIPLECOLOBEÆ; tribe, SUBULARIEÆ; Lindl. Syn. (1st ed.) pp. 20, 22, & 34.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Bot. v. i. pp. 146 & 151.—Mack. Fl. Hibern. pt. I. pp. 16 & 30.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, SUBULARIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, and 865.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 2.) upright, equal at the base; of 4 oval, concave, uniform, deciduous sepals. *Corolla* (see fig. 3.) of 4 inversely egg-shaped, entire, spreading petals (see fig. 4.), their claws not so long as the calyx. *Filaments* (see figs. 3 & 5.) 6, simple. *Anthers* of two round lobes. *Germen* (fig. 6.) egg-shaped, compressed. *Style* none. *Stigma* flat, quite sessile. *Pouch* (figs. 7 and 8.) oval, transversely compressed, entire, tipped with the stigma, of 2 cells and 2 valves; *valves* (see fig. 8.) deeply concave, boat-like, but not keeled; *dissepiment (partition)* membranous, elliptical, parallel to the valves, but crossing the narrowest diameter of the pouch. *Seeds* (see figs. 8 & 9.) 4 or more in each cell. *Cotyledons* (see fig. 10.) incumbent (o||), strap-shaped, curved.

The oval, pointless, many-seeded *pouch;* the tumid *valves;* and the strap-shaped, curved, incumbent *cotyledons;* will distinguish this from other genera in the same class and order.

One species British.

SUBULA'RIA AQUATICA. Water Awl-wort. Irish Rush Cress.

SPEC. CHAR. Leaves awl-shaped. Flowers small; opening under water.

Engl. Bot. t. 732.—Hook. Fl. Lond. t. 135.—Fl. Dan. t. 35.—Linn. Sp. Pl. p. 896.—Huds. Fl. Angl. (2nd ed.) p. 277.—Willd Sp. Pl. v. iii. pt. I. p. 423.—Sm. Fl. Brit. v. ii. p. 676.; Engl. Fl. v. iii. p. 157.—With. (7th ed.) v. iii. p. 754.—Gray's Nat. Arr. v. ii. p. 696.—Lindl. Syn. 1st ed. p. 24.; 2nd ed. p. 319.—Hook. Brit. Fl. p. 299.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 268.—Macr. Man. Brit. Bot. p. 20.—Lightf. Fl. Scot. p. 196.—Grev. Fl. Edin p. 141.—Burn. Outl. of Bot. v. ii. p. 866.—Dick. Fl. Abred. p. 45.—Irv. Lond Fl. p. 262.—Leight. Fl. of Shropshire, p. 310.—Mack. Catal. Pl. of Irel. p. 60.; Fl. Hibern. p. 30.—*Subularia erecta Juncifoliis acutis mollibus*, Ray's Syn. p. 307.—*Graminifolia aquatica, thlaspeos capitulis rotundis, septo medio siliculam dirimente.* Pluk. Almag. p. 180.; Phyt. t. 188. f. 5.—*Gramen junceum hibernicum minus, thlaspios capitulis Sherardi*, Moris. v. iii. p. 229. sect. 8. t. 10. f. 29.

Fig. 1. Plant, natural size.—Fig. 2. Calyx.—Fig. 3. A Flower.—Fig. 4 A Petal.—Fig. 5. A Stamen.—Fig. 6. Germen.—Fig. 7. Pouch.—Fig. 8. Same, with a valve open.—Fig. 9. A Seed.—Fig. 10. The curved, incumbent Cotyledons, *all magnified;* and all, except fig. 1, from Sir W. J. HOOKER's beautiful plate in the *Flora Londinensis.*

[*] From *subula*, an *awl;* the leaves being awl-shaped.

[†] See f. 38, n. †.

[‡] See f. 107, n ‡.

[§] See f. 38, *a.*

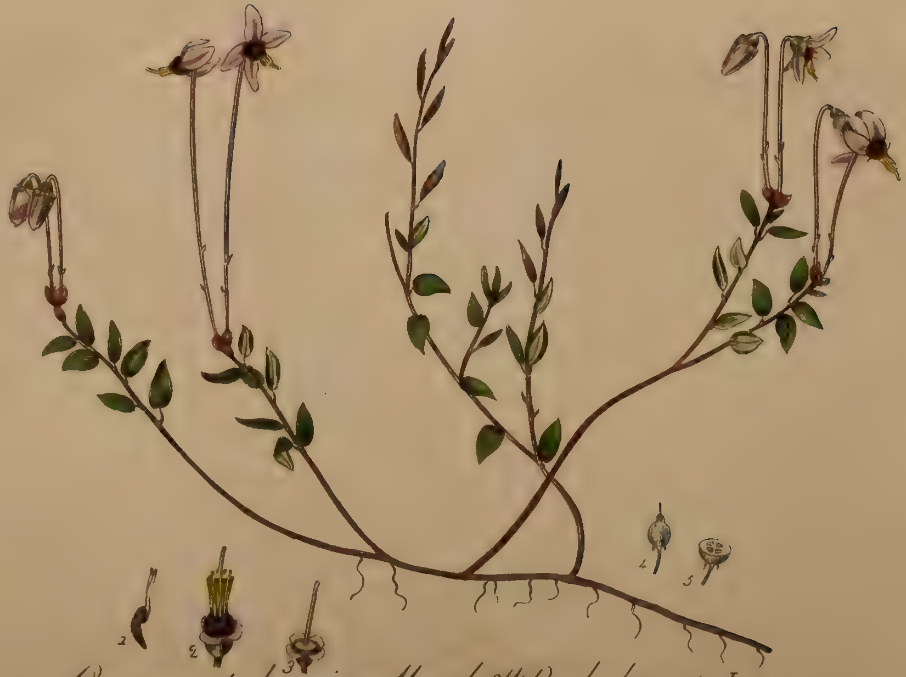
[||] See f. 62, n. ||.

Localities.—On the sandy or gravelly bottoms of alpine Lakes, under water.—*Shropshire;* Hancott Pool, near Shrewsbury: Mr. A. Aiken, in B. G.—WALES. *Anglesey;* Bed of a lake called Llyn Llywenan, in the parish of Bodedern: Rev. H. Davies. In a mill-pool, Llyn Maelog, with *Elatine hexandra:* N. B. G.—*Caernarvonshire;* Llyn Ogwen; and all the lakes about Snowdon: Mr. Griffith. Llyn y Cwn: Pennent. In plenty in Llyn Idwel: *Mag. Nat. Hist.* In the lake by the inn at Capel Curig: J. E. Leefe, in N. B. G.—*Denbighshire;* Llyn Aled: Waring, in B. G. Not uncommon: J. E. Bowman, Esq. in N. B. G.—SCOTLAND. *Aberdeenshire;* Loch of Drum, S. side, near Aberdeen: Dickie's *Fl. Abred.* Loch Callater; and in the small lake under the rocks where *Carex Vahlii* grows: Mr. H. C. Watson, in N. B. G.—*Argyleshire;* Loch Awe: N. J. Winch, Esq.—*Fifeshire;* Otterston Loch: Mr. Maughan.—*Perthshire;* Loch of Lubnaig, at the foot of Ben Ledi: N. B. G. Loch Tay; and Loch of Clunie: *Hook. Fl. Scot.*—*Sterlingshire;* Loch Lomond, by Inch Tavannoch: W. Borrer, Esq.—*Sutherland;* Fonnivan: N. B. G.—IRELAND. In a lake on Milrea Mountain, county of Mayo, 1500 feet above the level of the sea. Lough Carlan, a little N. W. of the Gap of Barnesmore, Donagal. Said to have been found in Lough Neagh by Sherard: *Fl. Hibern.*

Annual.—Flowers in July.

Root of many, long, white, simple fibres. *Stem* none. ***Leaves*** all radical, awl-shaped, spreading, smooth, (as is the whole plant,) from 1 to 2 inches long. *Scape (flower-stalk)* upright, somewhat zigzag, from 2 to 4 inches high; usually wholly under water. ***Flowers*** few, white, very minute, racemose; *pedicels* alternate, slender, single-flowered. *Pouch* (fig. 7.) upright, oval, smooth, tipped with the sessile roundish stigma; *valves* (see fig 8.) convex, tumid *Seeds* (see figs. 8 & 9.) oval, smooth. *Embryo* (see fig. 10.) curved above the base of its long, strap-shaped *cotyledons.*

It is a native of other colder parts of Europe besides Britain, as Lapland, Sweden, Norway, Germany, &c. It is singular that this curious little plant should blossom several feet below the surface of the water. According to Sir J. E. Smith and Sir W. J. Hooker, the flowers always remain entirely under that element, even during the time they are expanded; thus forming a remarkable deviation from the general rule, for water-plants almost invariably elevate their flowers above the water before the petals open, in order that fertilization may take place in air. That it does sometimes flower out of the water, appears from the following observations of the Rev. Hugh Davies. "In the dry summer of 1798," says Mr. Davies, "as I walked the bed of a lake called Llyn Llywenan, in the parish of Bodedern, [Anglesea,] whence the water had retired about two months before, I, unexpectedly, discovered this plant in great abundance. Notwithstanding its appearance was very different from what I had been used to see in the Arvonian Alpine Lakes, where it always blossoms and seeds at the bottom, under water of considerable depth, yet it did not seem to regret the privation; the foliage was spread, the leaves somewhat reclining, and the flowering stems procumbent; the calyx and corolla were fully expanded; the petals, which are white, and of an obovate form, were horizontal, the seed-vessels and seed quite perfected; and, on the whole, it seemed to indicate a quite different plant." *Welsh Botanology*, p. 61.



Oxycoccus palustris. Marsh Whortle-berry. ♄

Pub.^d by W. Baxter, Botanic Garden, Oxford, 1841.

OXYCO′CCUS*.

Linnean Class and Order. Octa′ndria †, Monogy′nia.

Natural Order. Vaccinie′æ, *Dec.*—Lindl. Syn. p. 134. ; Intr. to Nat. Syst. of Bot. p. 184.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 135.—Hook. Brit. Fl. (4th edit.) p. 411.—Ericæ, Juss. Gen. Pl. p. 159.—Sm. Gram. of Bot. p. 115.—Erica′ceæ ; tribe, Vaccinie′æ, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 and 789.—Loud. Arb. et Frutic. Brit. pp. 1076 & 1078.—Ericineæ ; sect. Vaccinie′æ, Rich. by Macgilliv. pp. 151 & 152.—Syringales ; subord. Ericosæ ; sect. Ericinæ ; type, Vaccinia′ceæ ; Burn. Outl. of Bot. v. ii. pp. 900, 937, & 944.—Bicornes, *Linn.*

Spec. Char. *Calyx* (see figs. 2 & 3.) superior, of 1 sepal, small, permanent, 4-lobed. *Corolla* of 4 somewhat strap-shaped, reflexed petals. *Filaments* (see figs. 1 & 2.) 8, awl-shaped, flattened, conniving, inserted into the receptacle, equal. *Anthers* (see fig. 1.) terminal, upright, oblong, tubular, with 2 points, opening by a terminal pore in each. *Germen* (see fig. 2.) inferior. *Style* (see fig. 3.) simple, cylindrical, upright, longer than the stamens (see fig. 2). *Stigma* blunt. *Berry* (figs. 4 & 5.) globular, 4-celled, many-seeded. *Seeds* small, angular.

The superior, 4-toothed *calyx ;* the *corolla* of 4 strap-shaped, reflexed petals ; the elongated *anthers,* opening by terminal pores without dorsal appendages ; and the globose, 4-celled, many-seeded *berry ;* will distinguish this from other genera in the same class and order.—It differs from *Vaccinium* (t. 383), in the *corolla* being entirely reflexed, and (at least in the British species) 4-petaled.

One species British.

OXYCO′CCUS PALU′STRIS. Marsh Cranberry. Common Cranberry. Marsh Whortleberry. Moor Berries. Fen Grapes. Fenberries. Marshworts. Moss Berries. Cowberries.

Spec. Char. Stems thread-shaped. Leaves small, egg-shaped, entire, pointed, smooth, with revolute margins. Peduncles terminal, single-flowered. Petals strap-shaped, pointed.

Pers. Syn. Pl. p. 419.—Gray's Nat. Arr. v. ii. p. 406.—Lindl. Syn. p. 134.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 858.—Loud. Encycl. of Gard. (new ed. 1835.) p. 937. parag. 5120 ; Arboret. et Frutic. Brit. p. 1168. f. 992.—Macr. Man. Brit. Bot. p. 148.—Irv. Lond. Fl. p. 144.—Leight. Fl. of Shropsh. p. 166.—*Oxycoccus vulgaris,* Pursh. Fl. Amer. Sept. v. i. p. 263.—*Oxycoccus, sue Vaccinia palustria,* Ray's Syn. p. 267.—Baub. Hist. v. i. p. 525, with a figure.—*Vaccinium oxycoccus,* Linn. Sp. Pl. p. 500.—Huds. Fl. Angl. (2nd ed.) p. 164.—Engl. Bot. t. 598.—Fl. Dan. t. 40.—Willd. Sp. Pl. v. ii. pt. I. p. 354.—Sm. Fl. Brit. v. i. p. 416. ; Engl. Fl. v. ii. p. 221.—With. (7th ed.) v. ii. p. 479.—Hook. Brit. Fl. p. 178.—Lightf. Fl. Scot. v. i. p. 202.—Abbot's Fl. Bedf. p. 86.—Thomps. Pl. of Berw. p. 40.—Davies' Welsh Bot. p. 37.—Purt. Midl. Fl. v. i. p. 196.—Relh. Fl. Cant. (3rd ed.) p. 158.—Bryant's Fl. Diæt. p. 174.—Hook. Fl. Scot. p. 119.—Grev. Fl. Edin. p. 87.—Johnst. Fl. of Berw. v. i. p. 88.—Winch's Fl. of Northumbl. and Durh. p. 25.—Walker's Fl. of Oxf. p. 109.—Perry's Pl. Varvic.

Fig. 1. A separate Stamen.—Fig. 2. Calyx, Stamens, and Pistil.—Fig. 3. Calyx, Germen, and Style.—Fig. 4. Berry.—Fig. 5. Transverse section of ditto.—Figs. 1, 2, and 3, *slightly magnified.*

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* From *oxus,* Gr. *sharp ;* and *kokkos,* Gr. a *berry ;* in reference to the sharp acid taste of the berries. Don.

† See folio 42, note †.

Sel. p. 35.—Baines' Fl. of Yorksh. p. 53.—Mack. Catal. of Pl. of Irel. p. 37; Fl. Hibern. p. 136.—*Vaccinia palustria*, Johnson's Gerarde, p. 1419.

Localities.—In watery turfy bogs, among mosses. Common in the North of England, as well as in the East, as in *Lincolnshire*, and the neighbouring part of *Norfolk;* and also in WALES, SCOTLAND, and IRELAND.

Shrub.—Flowers in May and June.

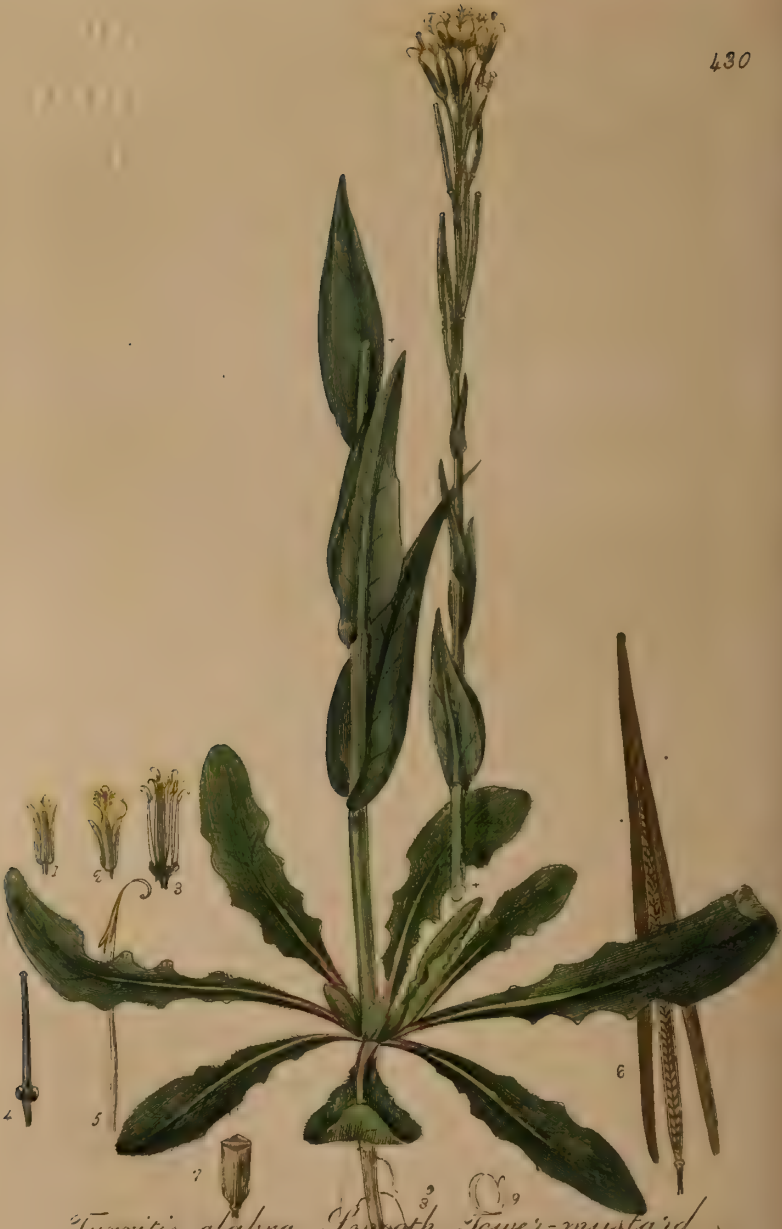
Roots creeping, with many long fibres. *Stems* straggling, slender, wiry, from 6 to 10 inches long, trailing and creeping, smooth, branched, leafy, with a deciduous cuticle. *Leaves* alternate, on very short petioles, egg-shaped, or somewhat heart-shaped, pointed, smooth, entire, their margins revolute; green and glossy above; glaucous beneath. *Flowers* very elegant, drooping, of a pink or rose-colour, each on a simple, red, slightly hoary peduncle, about an inch long, several together at the end of each branch, bearing a few minute scattered *bracteas* below the middle. *Calyx* (see figs. 2 & 3) small, coloured, smooth, in 4, blunt, slightly fringed, segments. *Corolla* (in all the specimens I have examined) of 4 distinct, reflexed petals, which fall off separately. *Filaments* (see figs. 1 & 2.) flat, incurved, purple, with fringed margins. *Anthers* upright, prominent, yellow, with two long tubular points, but no horns. *Berries* nearly globular, pale red spotted with purple in an early state, when fully ripe of a deep red.

A low, evergreen, trailing shrub, seldom rising higher than three or four inches. As well as of Europe, it is also a native on the boggy mountains of North America, from Canada to Pensylvania, and in the Island of Oonalashka. Pallas says it is also found in turfy bogs throughout the whole of Siberia, as far as the Northern Ocean. In Russia, and in some parts of Sweden, the long thread-shaped shoots are collected in the Spring, after most of the leaves have dropped off, and are dried, and twisted into ropes, which are used to tie on the thatch of houses, and even for harnessing horses. The berries are powerfully acid and astringent, and they have a peculiar flavour, which is agreeable to some, though disliked by others, Immersion in water for some hours is said to remove their disagreeable bitterness. In Sweden and Russia they are used for tarts and sweetmeats, and the expressed juice is considered efficacious in fevers. Pallas informs us, that bankers in Russia make use of the fruit for whitening their silver money, which they do by boiling it in the juice, when the sharp acid dissolves the superficial particles of the copper alloy. The same thing is done in Sweden to whiten silver plate. In Britain, almost the only use to which the berries are applied, is that of making tarts; and not long since Cranberries from Lincolnshire, and the north-west corner of Norfolk, were sold in the streets of Norwich by cart-loads; but the extensive inclosures have now, in many parts, destroyed and drained their native bogs, and rendered them more scarce in a wild state. It is recorded by Lightfoot, (in his *Flora Scotica*, published in 1789,) that at Longtown on the borders of Cumberland, they were made so considerable an article of commerce, that at the season when they were ripe, not less than 20 or 30 pounds worth were sold by the poor people each market-day, for five or six weeks together, which were afterwards dispersed over different parts of the kingdom, for making Cranberry-tarts. England is now chiefly supplied with Cranberries from Russia and Sweden, and with the sort produced by *O. macrocarpus* from N. America. The total quantity imported from both countries, according to M'Culloch, is from 30,000 to 35,000 gallons annually. (See *Loud. Arb. et Frutic. Brit.* p. 1169).

Goats eat the plant; cows, sheep, and horses refuse it.

Hysterium melaleucum is sometimes parasitical on the leaves.

For the plant from which the drawing for the accompanying plate was made, I am indebted to the kindness of Mr. J. Thompson, of Crowhall Mill, Northumberland.



Turritis glabra. Smooth Tower-mustard.

Mathews Del. & Sc.

Pub^d by W. Baxter Botanic Garden Oxford 1842.

TURRI'TIS *.

Linnean Class and Order. TETRADYNA'MIA †, SILIQUO'SA ‡.

Natural Order. CRUCI'FERÆ §, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCI'FERÆ; subord. PLEURORHI'ZEÆ; tribe, ARABI'DEÆ; Lindl. Syn. pp. 20 & 22.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 239.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 and 147.—Mack. Fl. Hibern. pp. 16.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subty. ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 4 oblong, upright, converging, deciduous sepals; the two opposite ones slightly protuberent at the base. *Corolla* (see fig. 2.) of 4 inversely egg-shaped, entire, upright petals, not twice the length of the calyx. *Filaments* (see figs. 3 & 5.) 6, thread-shaped, simple, upright, unconnected. *Anthers* (see fig. 5.) oblong, incumbent. *Germen* (see fig. 4.) strap-shaped, as long as the petals. *Style* very short. *Stigma* blunt. *Pod (silique)* (see fig. 6.) strap-shaped, compressed, very long and slender; valves straight, flat, each with a prominent nerve or keel, and quite as long as the strap-shaped membranous partition. *Seeds* very numerous, arranged in two rows in each cell (see fig. 6.), crowded, egg-shaped, compressed, slightly bordered. *Cotyledons* flat, accumbent (o=).

The strap-shaped *pod*, with flat, nerved or keeled, *valves;* and the *seeds* in a double row, with flat, accumbent *cotyledons;* will distinguish this from other genera in the same class and order.—It differs from *Arabis* (see t. 159.) in the seeds being arranged in a double row.

One species British.

TURRI'TIS GLABRA. Smooth Tower-mustard. Long-podded Tower-mustard. Towers Treacle.

SPEC. CHAR. Plant upright. Root-leaves toothed, hairy; stem-leaves entire, amplexicaul, smooth, glaucous.

Engl. Bot. t. 777.—Curt. Fl. Lond. t. 253.—Fl. Dan. t. 809—Linn. Sp. Pl. p. 930.—Huds. Fl. Angl. (2nd ed.) p. 291.—Willd. Sp. Pl. v. iii. pt. I. p. 542.—Sm. Fl. Brit. v. ii. p. 715.; Engl. Fl. v. iii. p. 215.—With. (7th ed.) v. iii. p. 781.—Gray's Nat. Arr. v. ii. p. 677.—Hook. Brit. Fl. p. 303.—Lindl. Syn. p. 24.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 160.—Macr. Man. Brit. Bot. p. 15.—Sibth. Fl. Oxon. p. 204.—Purt. Midl. Fl. v. i. p. 313.; v. iii. p. 369.—Hook. Fl. Scot. p. 200.—Winch's Fl. of Northumberl. and Durh. p. 45.—Walker's Fl. of Oxf. p. 194.—Perry's Pl. Varvic. Sel. p. 57.—Bab. Fl. Bath. p. 4.; Suppl. p. 70.—Irv. Lond. Fl. p. 164.—Baines' Fl. of Yorksh. p. 13.—Leight. Fl. of Shropsh. p. 317.—*Turritis*, Ray's Syn. p. 293.—Johnson's Gerarde, p. 272.

Fig. 1. Calyx.—Fig. 2. Ditto, and Corolla.—Fig. 3. Stamens.—Fig. 4. Pistil.—Fig. 5. A single Stamen.—Fig. 6. A ripe Pod.—Fig. 7. Transverse section of ditto.—Fig. 8. A Seed.—Fig. 9. Accumbent Cotyledons.—All, except figs. 6 and 8, *a little magnified.*

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* From *turris*, a *tower;* from the pyramidal growth of the plant.

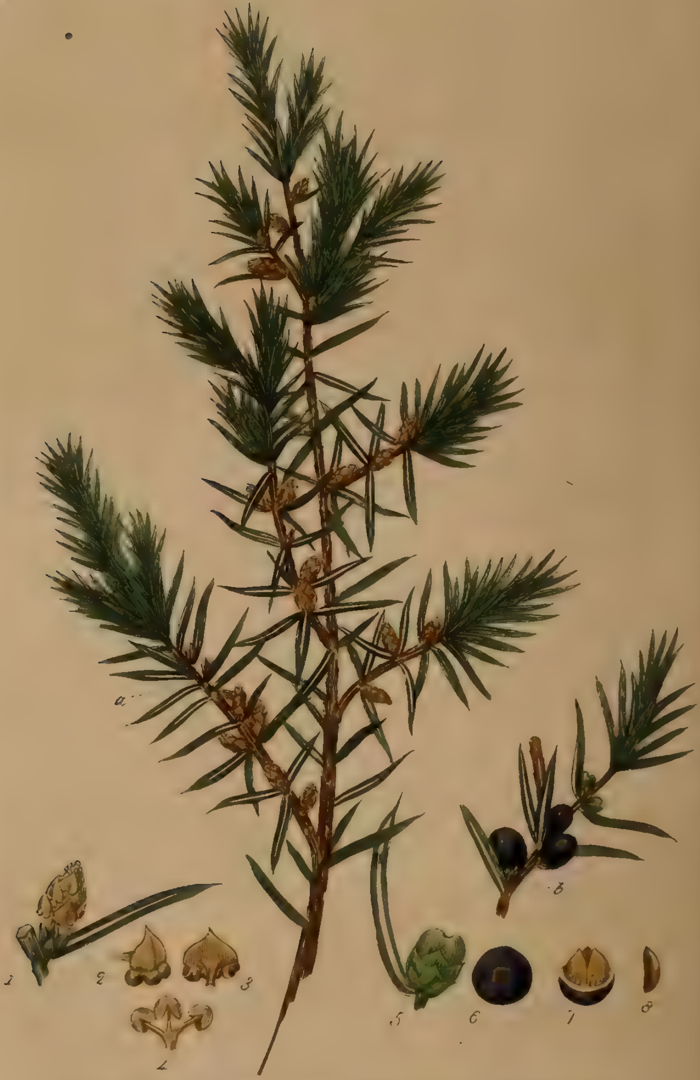
† See fol. 38, n. †. ‡ See fol. 62, n. ‡. § See fol. 38, *a*.

Localities.—On banks, by road-sides, and in woods, on a dry gravelly soil.—*Oxfordsh.* Stow Wood: Dr. Sibthorp. Plentiful in the same place, May 11, 1841: W. B.—*Berks;* By the road-side near Maidenhead: B. G.—*Bucks;* Road-sides, and old gravel-pits near Burnham. About Denham: B. G.—*Derbysh.* Between Ashborn and Okeover: B. G. Bretby: N. B. G.—*Dorset;* Old walls at Dorchester; very rare: B. G.—*Durham;* Near Gainford, in hedges not far from the turnpike-gate; and near Starley Bourn: N. J. Winch, Esq.—*Essex;* Hedge near Mistley; and on banks by the highway side as you go up the hill from Lexden to Colchester: B. G. Oliver's Mount, Colchester: N. B. G.—*Gloucestersh.* On St. Vincent's Rocks; and in waste places near Gloucester: N. B. G.—*Hants;* Near Froxfield; and Old Alresford, sparingly: N. B. G.—*Kent;* Near Lewisham, in a lane which leads down by Charlton Church, sparingly; Charlton Sand-pits: B. G. Near Charlton; and all about Bromley, especially towards Hayes, in profusion: Mr. W. Pamplin, jun. in N. B. G.—*Middlesex;* Near Slough: Ray.—*Norfolk;* Between Norwich and Yarmouth, in many places about three miles from Norwich; and in the road to Coltishall; in a hedge by the windmill at Wortwell; hedges at Wroxham and Horstead, not uncommon: B. G. Brundall and Thorpe, by Norwich: N. B. G.—*Northumberland;* On the banks of hedges between Anick Grange and Hexham; and on walls near Ovingham: N. J. Winch, Esq.—*Notts;* Fields between Radford and Lenton: B. G. Lenton; Bestwood Park; and near Bulwell and Cuckney: N. B. G.—*Shropsh.* Neach Hill in Donnington parish near Shiffnal; near Marton; Shotton near Shrewsbury; ditch banks about Beckbury, Badger, Ruyton, Stockton, Worfield, &c.; and by the side of the road between Allfield and King-street Turnpike near Berrington; and near Leaton Knolls between Shrewsbury and Leaton Shelf: *Fl. Shropsh.*—*Somersetsh.* In old quarries about Bath; and between the lodge and the house at Spye Park: *Fl. Bath.*—*Staffordsh.* Near Litchfield: Mrs. Acland.—*Suffolk;* Flixton; near Dunwich; hedge on the London road, between Woodbridge and Ipswich, near Kesgrove; Farnham, by the way to Aldborough, where the old road was: B. G.—*Surrey;* Near Richmond; by the road-side under the pales of Claremount, near Esher; and on Kew garden-wall: B. G. Gravelly banks between Kingston and Wimbledon: N. B. G.—*Warwicksh.* On Dorsthill near Tamworth: B. G. Near Allesley: Rev. A. Bloxam.—*Wilts;* In a wood between the lodge-gate of Spye Park and the House: N. B. G.—*Worcestersh.* Near an old Stone-quarry, between the Mitre Oak and Stourpourt; on hedge-banks in the lanes about Kidderminster and Stourbridge; and near Hartlebury: N. B. G.—*Yorksh.* Sowerby fields; between Thirsk and Kilvington; at Darfield, near Sheffield; on the right hand side of the road from Green Hammerton to Boroughbridge; and in the lane between Brompton and Catteric Bridge: *Fl. of Yorksh.* Near Richmond; Rotherham; Ripon; and Halperby: N.B.G.—SCOTLAND. *Dumbartonshire;* In the wood opposite the inn, Bowling Bay; sparingly: Hopkirk.

Annual.—Flowers in May and June.

Root tapering. *Stem* upright, straight, from 2 to 3 feet high, simple, cylindrical, solid, smooth and glaucous, except at the very base, which is clothed with soft deflexed hairs. *Root-leaves* spreading, toothed or sinuated; hairy. *Stem-leaves* numerous, upright, oblong-arrow-shaped, generally entire, but occasionally slightly toothed, glaucous, quite smooth, somewhat arrow-shaped and stem-clasping at the base. *Flowers* numerous, yellowish-white, in a close corymb. *Pods* very long and slender, smooth and even, upright, lying close to the stem so as to conceal it, nearly cylindrical; the valves single-ribbed. *Seeds* about 60 in each cell, minute, inversely egg-shaped.

A native of most parts of Europe, in dry exposed situations; and also of N. America, from Hudson's Bay to the Rocky Mountains, and as far North as lat. 64°.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Juniperus Communis. Common Juniper. ♄

Mathews del. & sc.   Pub^d by W. Baxter Botanic Garden Oxford 1841

JUNI'PERUS*.

Linnean Class and Order. DIŒ'CIA†, MONADE'LPHIA‡.

Natural Order. CONI'FERÆ, *Linn.*—Juss. Gen. Pl. p. 411.—Sm. Gram. of Bot. p. 190.—Lindl. Syn. p. 240.; Introd. to Nat. Syst. of Bot. p. 247.—Rich. by Macgilliv. p. 546.—Loud. Hort. Brit. p. 535.; Arb. et Frutic. Brit. p. 2103.—Mack. Fl. Hibern. p. 258.—Hook. Brit. Fl. (4th ed.) p. 420.—PINEALES; sect. CUPRESSINÆ; type, THUJACEÆ; Burn. Outl. of Bot. v. i. pp. 492 & 502.

GEN. CHAR. *Sterile Flower* (see fig. 1). *Catkin* (fig. 1.) conical, without scaly bracteas. *Stamens* inserted in the axis of the catkin, imbricated; *filaments* (see figs. 2, 3, & 4.) dilated into a scale bearing the anthers on the margin at the base; *anthers* from 3 to 6, globose, 1-celled. *Fertile Flower* (see fig. 5.) *Catkin* egg-shaped, resembling a bud; consisting of from 1 to 3 fleshy germens, with bracteas at the base. *Berry* (fig. 6.) composed of the enlarged and united germens, scaly at the base, 3-seeded (see fig. 7). *Seeds* (fig. 8.) obscurely 3-cornered, with 5 gland-bearing cells towards the base.

The egg-shaped *catkin* of *sterile flowers*, each with from 3 to 6, globose, 1-celled anthers; and the 3-seeded, berry-like *fruit*, of the fertile flowers; will distinguish this from other genera in the same class and order.

Two species British.

JUNI'PERUS COMMU'NIS. Common Juniper.

SPEC. CHAR. Stem upright. Leaves 3 in a whorl, tipped with a spine, spreading, longer than the ripe fruit.

Engl. Bot. t. 1100.—Woodv. Med. Bot. v. ii. p. 259. t. 95.—Linn. Sp. Pl. p. 1470, *a*.—Huds. Fl. Angl. (2nd ed.) p. 436, *a*.—Willd. Sp. Pl. v. iv. pt. II. p. 853.—Sm. Fl. Brit. v. iii. p. 1085.; Engl. Fl. v. iv. p. 251.—With. (7th ed.) v. iii. p. 795.—Gray's Nat. Arr. v. ii. p. 226.—Lindl. Syn. p. 241.—Hook. Brit. Fl. p. 438, excl. var. β.—Loud. Arb. et Frutic. Brit. p. 2489. in part. f. 2348. and f. 2349.—Macr. Man. Brit. Bot. p. 219.—Lightf. Fl. Scot. v. ii. p. 623. excl. var. β.—Sibth. Fl. Oxon. p. 210.—Abbot's Fl. Bedf. p. 350.—Thomps. Pl. of Berw. p. 97.—Davies' Welsh Bot. p. 95.—Thorn. Fam. Herb. p. 845, with a figure.—Purt. Midl. Fl. v. ii. p. 482.—Relh. Fl. Cant. (3rd edit.) p. 411.—Hook. Fl. Scot. p. 290.—Grev. Fl. Edin. p. 211.—Johnst. Fl. of Berw. v. i. p. 221.—Winch's Fl. of Northumbl. and Durh. p. 65, excl. var. β.—Walker's Fl. of Oxf. p. 299.—Baxt. Lib. of Agricul. and Horticul. Knowl. (2nd edit.) p. 404.—Lindl. Fl. Med. p, 556.—Bab. Fl. Bath. p. 46.; Suppl. p. 92.—Dick. Fl. Abred. p. 58.—Irv. Lond. Fl. p. 114.—Luxf. Reig. Fl. p. 85.—Cow. Fl. Guide, p. 35.—Baines' Fl. of Yorksh. p. 94.—Leight. Fl. of Shropsh. p. 496.—Mack. Catal. of Pl. of Irel. p. 87.; Fl. Hibern. p. 259.—*Juniperus vulgaris, baccis parvis purpureis*, Ray's Syn. p. 444.—Bauh. Hist. v. i. pt. II. p. 293.—*J. vulgaris fruticosa*, Bauh. Pin. p. 488.—*Juniperus*, Johnson's Gerarde, p. 1372.

LOCALITIES.—On heaths and open hilly spots, especially on a chalky soil.

Fig. *a*. A Branch with Sterile Flowers.—Fig. *b*. Ditto with Fertile ones.—Fig. 1. Sterile Flower.—Figs. 2, 3, & 4, Stamens.—Fig. 5. A Fertile Flower.—Fig. 6. A Ripe Fruit.—Fig. 7. The same with part of the fleshy covering removed.—Fig. 8. One of the Nuts.—Figs. 1 to 5, *somewhat magnified*.

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* From *jeneprus*, Celtic, *rude* or *rough*.

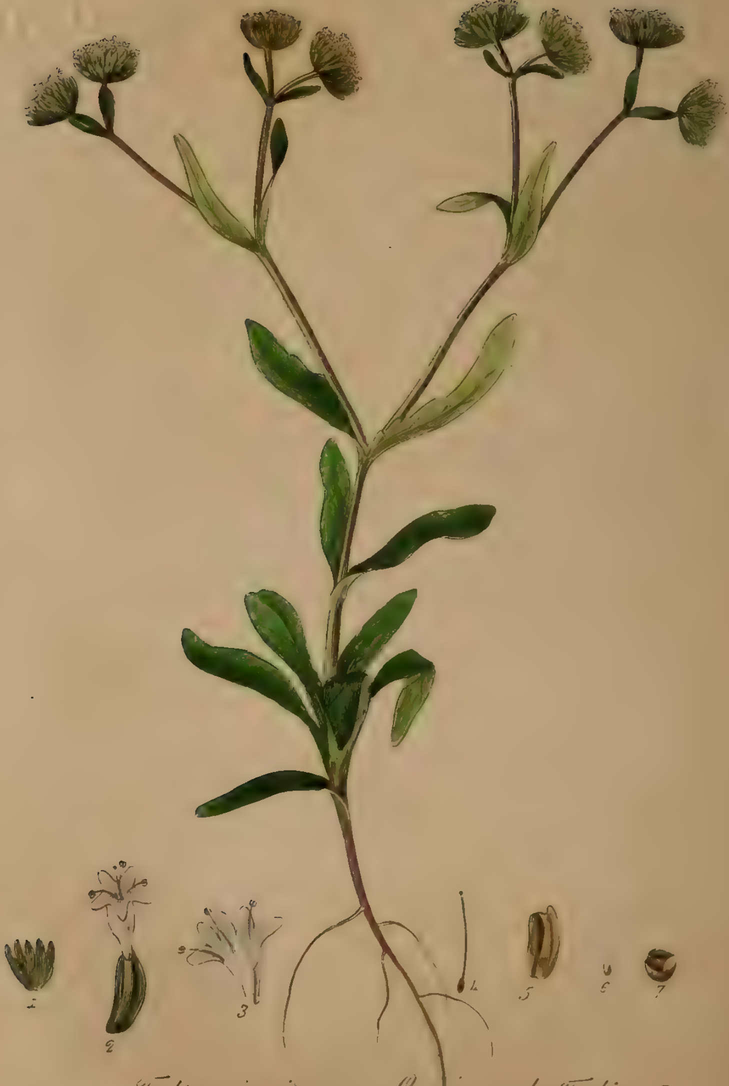
† See folio 143, note †. ‡ See folio 106, note †.

Shrub.—Flowers in May.

A low, evergreen, bushy *shrub*, seldom rising more than three or four feet high; and sending out many spreading, tough, leafy branches, which incline on every side, and are covered with a smooth, brown or reddish bark, with a tinge of purple. *Branches*, when young, somewhat triangular, or quadrangular, the angles occasioned by tubular ridges which contain an abundance of resinous matter; these ridges disappear on the older branches, and the bark becomes cracked and scaly. *Leaves* spreading, three in each whorl, strap-shaped, straight, entire, with a fine sharp point; channelled and glaucous above; convex, keeled, and dark green, beneath; the margins sometimes roughish. *Flowers* axillary, sessile, small; the sterile ones (fig. 1.) discharging a copious cloud of yellow *pollen;* fertile ones (fig, 5.) green, on scaly stalks; these are succeeded by roundish berries, which continue on the bush two years, and are first green, but, when ripe, are of a dark purple or blackish-blue colour, covered with a bloom. Each berry contains three seeds or nuts (see fig. 7.) and is marked at the top with three raised dots, and a 3-forked groove.

In a wild state this is usually a low shrub, but when cultivated it will attain the height of 10 or more feet; and Mr. Loudon, in his excellent *Aboretum et Fruticetum Britannicum*, records a tree of this species at Wardour Castle, which is 30 feet high, and is supposed to be the largest in England. The *Juniper* is obnoxious to the growth of grass, none, in general, being found to grow under it; but it is said, that the *Avena pratensis*, or *Meadow Oat-grass*, will in turn destroy it. The wood is hard and durable, is finely veined, of a yellowish-brown colour, and very aromatic; and from its beauty, and the high polish it will take, it is employed for walking-sticks, cups, and various articles of turnery, and also for veneering, &c. It makes excellent fuel, and is used in Scotland and Sweden for smoking hams. The bark is made by the Laplanders into ropes. The berries are spicy and stomachic, and are esteemed in medicine as being stimulating and diuretic, their properties depending on an essential oil which they contain; when boiled they yield a considerable quantity of sugar; and Linnæus states, that such a decoction, when fermented, forms a common drink in Sweden; they are, however, now principally used in making gin, which is simply a spirit distilled from corn, and flavoured by an infusion of these berries, but oil of turpentine is too often substituted for them, which, though it nearly resembles them in flavour, has none of their virtues. Horses, sheep, and goats are said to eat the Juniper, and various mountain birds feed on the berries. *Podisoma Juniperi communis*, Fr. is sometimes parasitical on the living branches; and *Hysterium Juniperi*, Grev. on the dead leaves of this species.—*Juniperus nana*, Sm. Engl. Fl. is considered by many authors as a prostrate variety of *J. communis.*

The *Natural Order* Coniferæ is composed of *trees* or *shrubs*, which abound in resin. Their *leaves* are strap-shaped, spear-shaped, or needle-shaped. Their *flowers* monœcious or diœcious; with the *sterile florets* arranged on a deciduous catkin about a common rachis; and the *fertile ones* usually in cones, sometimes solitary. The *ovules* are upright, and naked, sometimes seated in an envelope, which in *Taxus* becomes succulent. The *nuts* are either solitary and naked, or enclosed within the hardened scales of a woody cone. *Embryo* with from 2 to 10 *cotyledons.*—The British genera are *Pinus*, t. 389.; *Taxus*, t. 222.; and *Juniperus*, t. 431.



Fedia carinata. Carinated Fedia. ⊙

Mathews Del & Sc

Pub.^{d} by W.Baxter. Botanic Garden, Oxford 1841.

FE'DIA[*].

Linnean Class and Order. TRIA'NDRIA[†], MONOGY'NIA.

Natural Order. VALERIA'NEÆ, Dec. Fl. Fr. (3rd ed.) v. iv. p. 232.—Lindl. Syn. p. 137; Introd. to Nat. Syst. of Bot. p. 197.—Rich. by Macgilliv. p. 458.—Loud. Hort. Brit. p. 520.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 665.—Mack. Fl. Hibern. p. 139.—Hook. Brit. Fl. (4th edit.) p. 410.—DIPSACEÆ, Juss. Gen. Pl. p. 194.—Sm. Gram. of Bot. p. 125.—SYRINGALES; subord. ASTEROSÆ; sect. VALERINÆ; type, VALERIANACEÆ; Burn. Outl. of Bot. pp. 900, 901, 916, & 917.—AGGREGATÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) small, upright, unequally toothed, crowning the fruit. *Corolla* (see figs. 1 & 2.) superior, of 1 petal, funnel-shaped, limb in 5 blunt segments; tube gibbous at the base. *Filaments* (see figs. 2 & 3.) 3, sometimes more, inserted in the tube, and rather shorter than the limb. *Anthers* roundish. *Germen* (see fig. 2.) inferior, of 3 cells, roundish and oblong. *Style* (fig. 4.) thread-shaped. *Stigma* notched. *Capsule* (fig. 5.) various in shape, indehiscent, 3-celled, 2 cells abortive, crowned with the teeth of the permanent calyx. *Seeds* (fig. 6.) solitary, smooth.

The small, unequally toothed *calyx*, crowning the fruit; the monopetalous, 5-cleft *corolla*, gibbous at the base; and the indehiscent, 3-celled *capsule;* will distinguish this from other genera in the same class and order.

Six species British.

FE'DIA CARINA'TA. Keeled-fruited Fedia. Carinated Corn-salad. Lambs' Lettuce.

SPEC. CHAR. Capsule oblong, longitudinally boat-shaped, deeply furrowed in front, keeled at the back; the two sterile cells nearly equal to the fertile one; crowned with the straight single tooth of the calyx. Flowers capitate.

Steven in Mem. Soc. Mosc. vol. v. p. 346.—Roem et Schultes Syst. v. i. p. 361.—Hook. Brit. Fl. (4th ed.) p. 22.—Bab. Prim. Fl. Sarn. p. 48.—*Valerianélla carinata*, Lois. Not. p. 149.—De Cand. Prod. v. iv. p. 629.—Lindl. Syn. (2nd edit.) p. 324.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 670.—Leight. Fl. of Shropsh. p. 27.—*Valerianella, semine umbilicato nudo oblongo, nobis,* Moris. Oxon. sect. 7. t. 16. f. 31.

LOCALITIES.—In corn-fields, hedge-banks, and on walls; very rare.—*Oxfordshire;* On a wall in Rose Lane, Oxford, opposite the Botanic Garden; May 21, 1841.—As this species has been cultivated in the Botanic Garden for these last three years, it may possibly have escaped from thence to the wall on the opposite side of the lane; yet a *Fedia* has grown there for several years, but, till I examined it this season, I had always considered it to be *F. olitoria,* a species which is common about Oxford, but which is not now on the wall in question:

Fig. 1. Involucrum.—Fig. 2. Germen, Calyx, and Corolla.—Fig. 3. Corolla opened vertically.—Fig. 4. Pistil.—Fig. 5. Capsule.—Fig. 6. A Seed.—Fig. 7. Transverse section of the Capsule.—*All,* except figs. 1 & 6, *magnified.*

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[*] From *fedus*, an ancient word, synonymous with *hœdus*, a *kid*. DON.

[†] See folio 56, note †.

W. B.—*Essex;* On a garden wall at Marden Ash, a short mile from Ongar, nearly opposite to where the road branches off to Brentwood (Mr. Borrer), very difficult to get at, and I have no doubt escaped from cultivation: W. A. Bromfield, in *New Bot. Guide.—Shropshire;* Hedge-bank, close to the Long Lane Quarry, near Cheney Longville: W. A. Leighton, B. A. in *Fl. of Shropsh.* Hedge-banks under the quarries near Leigh Hall, one mile from Grimmer Rocks: J. E. Bowman, Esq. *ibid.* Hedge-bank of a bye-road about a mile from the Craven Arms, eight miles W. of Ludlow: J. E. Bowman, in Brit. Fl. 4th edit.—WALES. *Denbighshire;* Between Gresford and Wrexham: *ibid.*—Common on cultivated and waste land in the islands of Jersey; Guernsey; and Alderney: C. C. Babington.

Annual.—Flowers from April to June.

Root small, tapering, fibrous. *Stem* from 3 to 15 inches high, dichotomously branched, without distinct flowers in the forks, grooved, and rough with rigid deflexed bristles. *Root-leaves* spathulate; those of the stem oblong, blunt, entire, or slightly toothed, somewhat stem-clasping, their margins clothed with short, rigid, projecting bristles. *Flowers* small, pale-blue, in terminal, compact heads, with a kind of involucrum at their base, formed of numerous, crowded, often divided, oblong *bracteas,* ciliated and membranous at their margins. *Capsule* (see fig. 5.) oblong, somewhat 4-angled, 3-lobed, deeply furrowed in front, keeled on the back, slightly pubescent, 3-celled, equal, two of the cells (see fig. 7.) a little divergent, single-ribbed on each side, and abortive, the fertile one transverse, with a longitudinal rib at the back, and terminated in a short blunt tooth. *Seed* solitary in the fertile cell, oval, smooth. (See *The Flora of Shropshire*).

This species, which is a native in France, Germany, Tauria, Sicily, &c. as well as in Britain, has the habit of *Fédia olitória,* or common Lambs' Lettuce, to which it is closely allied, but from which it may be readily distinguished by its oblong, boat-shaped capsule, crowned with a single tooth. It may, like *F. olitoria,* be used in salads through the Winter and early Spring, as a substitute for common lettuce, to which it is said to be very little inferior.—The specimen figured was from a wall in Rose Lane, Oxford.

The *Natural Order* VALERIA'NEÆ consists of small, *herbaceous, dicotyledonous plants,* with opposite *leaves,* without stipulas. Their *flowers* are either corymbose, panicled, or capitate. The *calyx* is superior, with the limb either toothed or forming a *pappus.* The *corolla* is monopetalous, tubular, and inserted into the top of the germen, with from 3 to 6 lobes, either regular or irregular, and sometimes spurred at the base. The *stamens* vary from 1 to 5, they are inserted into the tube of the corolla, and alternate with its lobes. The *ovary* has one perfect cell and often two abortive ones. The *fruit* is dry and indehiscent; and the *seed* solitary and pendulous, with a straight *embryo,* destitute of albumen. The British Genera are *Valeriana,* t. 90; and *Fedia,* t. 432.—It is said, that the seeds of *Valeriana rubra* (t. 90.) have been used in former times for embalming the dead; and that some thus employed in the 12th century, on being removed from the cere-cloth, in the 19th century, and planted, vegetated.

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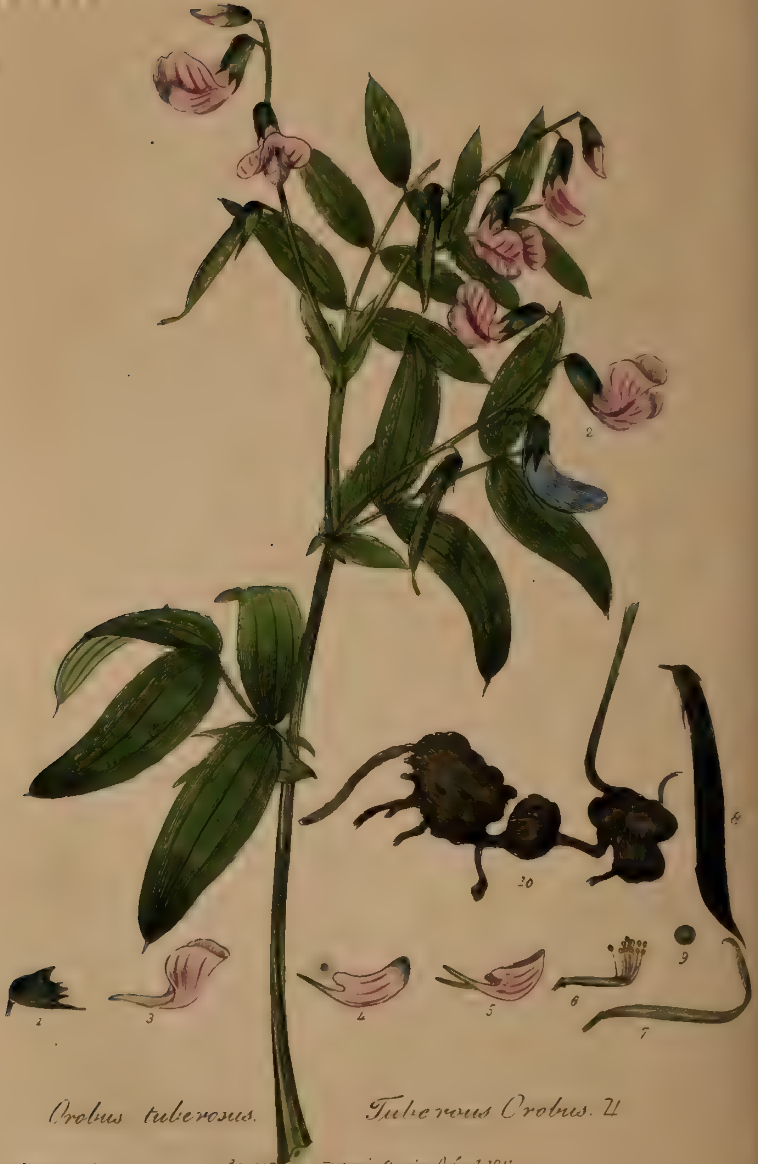
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Orobus tuberosus. *Tuberous Orobus.* ♃

Mathews. Del. & Sc

Pub^d by W Baxter Botanic Garden. Oxford 18[illegible]

O'ROBUS*.

Linnean Class and Order. DIADE'LPHIA†, DECA'NDRIA.

Natural Order. LEGUMINO'SÆ, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75.; Introd. to Nat. Syst. of Bot. p. 87.—Rich. by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 91.—LEGUMINA'CEÆ, Loudon's Arb. Brit. p. 561.—PAPILIONA'CEÆ ‡, *Linn.*—ROSALES; sect. CICERINÆ; subsect. LOTIANÆ; type, LATHYRACEÆ; subtype, VICIDÆ; Burn. Outl. of Bot. pp. 614, 638, 642, 659, & 661.

GEN. CHAR. *Calyx* (fig. 1.) inferior, cup-shaped, unequal, with 5 acute segments; the two upper shorter and more distant; the lower one longest. *Corolla* (fig. 2.) papilionaceous, of 5 petals; standard (fig. 3.) inversely heart-shaped, reflexed at the sides, rather longer than the rest; wings (fig. 4.) inversely egg-shaped, ascending, approaching each other; keel (fig. 5.) rounded, pointed, rather tumid, of 2 united petals, with separate claws. *Filaments* (fig. 6.) 10, 9 united into a compressed tube, open at the upper edge; the 10th hair-like, and distinct. *Anthers* small, roundish. *Germen* (fig. 7.) oblong, compressed. *Style* (see fig. 7.) ascending, straight, cylindrical, channelled above. *Stigma* longitudinal, linear, downy, running along the inner, or upper, side of the upper half of the style. *Legume* (fig. 8.) oblong, or linear, tumid, or somewhat cylindrical, with a sharp ascending point, of 1 cell, and 2 rigid, twisting valves. *Seeds* (fig. 9.) several, roundish, with a linear hilum.

The cup-shaped, irregularly 5-cleft *calyx*, blunt at the base; the slender, strap-shaped *style*, downy on the upper side, beneath the stigma; the cylindrical, oblong, 1-celled, many-seeded *legume;* and the *leaves* without tendrils; will distinguish this from other genera, with diadelphous stamens, in the same class and order.

Three species British.

O'ROBUS TUBERO'SUS. Tuberous-rooted Orobus. Bitter-Vetch. Heath Pea. Wood Pea. Heath Peaseling.

SPEC. CHAR. Stem simple, winged, smooth, upright, tuberous at the base. Leaves pinnate; leaflets 2 or 3 pairs, elliptic-spear-shaped, smooth. Stipulas half-arrow-shaped; toothed at the base. Peduncles few-flowered, scarcely longer than the leaves.

Engl. Bot. t. 1153.—Curt. Fl. Lond. t. —Linn. Sp. Pl. p. 1028.—Huds. Fl. Angl. (2nd ed.) p. 314.—Willd. Sp. Pl. v. iii. pt. II. p. 1074.—Sm. Fl. Brit. v. ii. p. 761.; Engl. Fl. v. iii. p. 272.—With. (7th ed.) v. iii. p. 837.—Gray's Nat. Arr. v. ii. p. 613.—Lindl. Syn. p. 87.—Hook. Brit. Fl. p. 320.—De Cand. Prod. v. ii. p. 378.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 339.—Macr. Man. Brit. Bot. p. 60.—Lightf. Fl. Scot. v. i. p. 388.—Sibth. Fl. Oxon. p. 221.—Abbot's Fl. Bedf. p. 155.—Bryant's Fl. Diætet. p. 37.—Thomps. Pl. Berw. p. 72.—Davies' Welsh

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Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. The Standard.—Fig. 4. One of the Wings.—Fig. 5. The Keel.—Fig. 6. Stamens.—Fig. 7. Germen, Style, & Stigma.—Fig. 8. Legume.—Fig. 9. A Seed.—Fig. 10. The tuberous Root.

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* From *oro*, Gr. to *strengthen* or *invigorate;* and *bous*, Gr. *an ox;* from the plants yielding food for cattle.

† See folio 77. note †.

‡ See folio 117. note ‡.

Bot. p. 69.—Purt. Midl. Fl. v, i. p. 340.—Hook. Fl. Scot. p. 213.—Grev. Fl. Edin. p. 156.—Fl. Devon. pp. 120 & 174.—Johnst. Fl. of Berw. v. i. p. 159.—Winch's Fl. of Northumb. and Durh. p. 47.—Walker's Fl. of Oxf. p. 206.—Loud. Encycl. of Gard. (new ed, 1835.) p. 882. paragr. 4708.—Bab. Fl. Bath. p. 14. ; Suppl. p. 75.—Dick. Fl. Abred. p. 48.—Irv. Lond. Fl. p. 175.—Luxf. Reig. Fl. p. 63.—Cow. Fl. Guide, p. 40.—Baines' Fl. of Yorksh. p. 33.—Leight. Fl. of Shropsh. p. 351.—Mack. Catal. of Pl. of Irel. p. 66. ; Fl. Hibern. p. 84.—*Orobus sylvaticus, foliis oblongis glabris*, Ray's Syn. p. 324.—*Astragalus sylvaticus*, Johns. Gerarde, p. 1237.—Sibb. Scot. Illust. pt. II. p. 11. t. 1.

LOCALITIES.—In mountainous pastures, thickets, and woods; frequent.

Perennial.—Flowers in May and June.

Root somewhat creeping, externally blackish, with oblong tubers. *Stem* about a foot high, sometimes decumbent, but usually upright, simple, slender, smooth, leafy, with 3 or 4 angles, the two opposite angles winged. *Leaves* alternate, winged, their common foot-stalk (petiole) projecting beyond the leaflets into a bristle-shaped appendage; *leaflets* from 2 to 3 pairs, elliptic-oblong, opposite, sessile, entire, smooth, with a sharp point, and 3 longitudinal ribs. *Stipulas* half-arrow-shaped, usually more or less toothed at the base, sometimes entire. *Peduncles* axillary, about as long as the leaves, few-flowered; each flower on a short, slender pedicel. *Calyx* (fig. 1.) tubular, smooth, purplish, blunt at the base, irregularly 5-toothed, lower tooth the longest, two upper teeth shortest. *Corolla* (fig. 2.) elegantly variegated and veined, with purple, crimson, and shades of blue and flesh-colour, changing to blue as it fades. *Legume* (fig. 8.) pendulous, long, cylindrical, black when ripe. *Seeds* globose, a little compressed, of a yellowish-brown colour. It sometimes varies with narrow strap-shaped leaflets, and it then constitutes *Orobus angustifolius* of ROTH'S *Tentamen Floræ Germanicæ*, v. i. p. 305; and of D. DON, in *The Memoirs of the Wernerian Natural History Society*, v. iii. p. 301.

This species of *Orobus* is a native of almost every part of Europe, in woods, and among bushes. In the Highlands of Scotland it is called *Corr* or *Cor-Meille*, and the Highlanders have a great esteem for the tubercles of the roots (see fig. 10), which they dry and chew, as our people do tobacco, to give a better relish to their liquor. They also affirm them to be good against most disorders of the chest, and that by the use of them they are enabled to repel hunger and thirst for a long time. In Breadalbane and Ross-shire they sometimes bruise and steep them in water, and make an agreeable fermented liquor with them. They have a sweet taste, something like the roots of liquorice, and when boiled are savoury and nutritious; ground to powder they may be made into bread. In Holland and Flanders they are roasted and eaten in the same manner as chesnuts. This plant is supposed to be the *Chara* named in CÆSAR'S *Commentaries*, De Bell. Cib. iii. 40., the root of which, steeped in milk, was such a relief to the famished army at the siege of Dyrrachium. It is also believed to have been the Caledonian food described by DIO, on which, mixed with milk, the soldiers of VALERIUS' army subsisted under a penury of bread.

Horses, cows, goats, and sheep, will eat the plant.—The tubers of *Lathyrus tuberosus* (Bot. Mag. t. 111.), an exotic plant, are said to possess the same properties as those of the *Orobus*, and instructions for the cultivation of them may be seen in the 2nd volume of the Transactions of the Horticultural Society of London, p. 359.; and in Mr. LOUDON'S Encyclopœdia of Gardening, (new edit.) p. 882. paragr. 4708.

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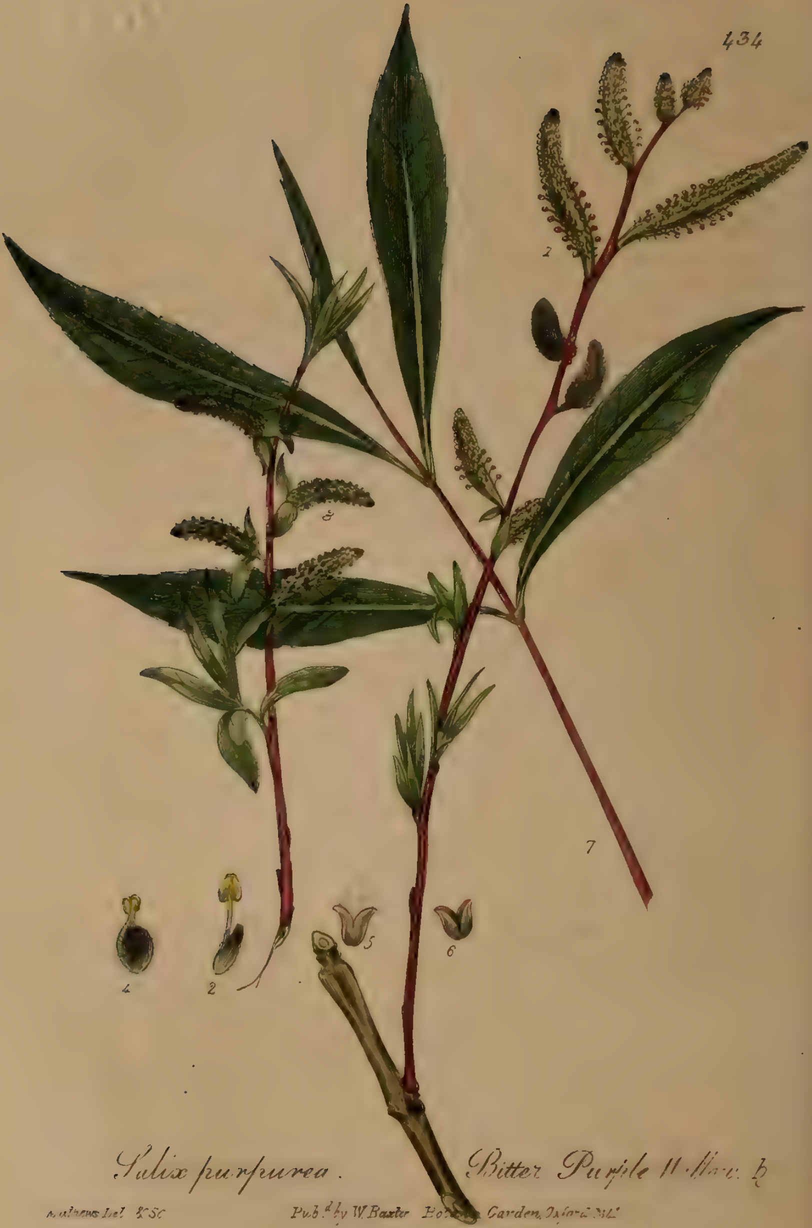

Salix purpurea. *Bitter Purple Willow.* ♄

Mathews Del. & Sc.

Pub.^{d} by W. Baxter Bo[illegible] Garden, Oxford [illegible]

SA'LIX[*].

Linnean Class and Order. Diœ'cia[†], Dia'ndria[‡].

Natural Order. Salici'neæ, Rich. by Macgilliv. p. 543.—Lindl. Intr. to Nat. Syst. p. 98.—Salica'ceæ, Loud. Arboret. et Frutic. Brit. v. iii. p. 1453.—Amenta'ceæ, *Linn.*—Juss. Gen. Pl. p. 407.—Sm. Gram. of Bot. p. 189.—Loud. Hort. Brit. p. 534.—Mack. Fl. Hibern. p. 242.—Hook. Brit. Fl. (4th edit.) p. 419.—Querneales; sect. Quercinæ; type, Salicaceæ; Burn. Outl. of Bot. pp. 523 & 526.

Gen. Char. *Flowers* diœcious, very seldom monœcious. *Sterile Flower* (see figs. 1 & 2). *Catkin* oblong, many-flowered, imbricated every way. *Calyx* (fig. 2.) a single-flowered, oblong, spreading, flexible scale. *Petals* none. *Nectary* a small, lateral, oblong, blunt, compressed, honey-bearing gland, sometimes double. *Filaments* (see fig. 2.) usually 2, rarely 1, or from 3 to 5, or more, straight, thread-shaped, longer than the calyx; in some partly combined. *Anthers* 2-lobed, of 2 or 4 cells. *Fertile Flower* (see figs. 3 & 4). *Catkin* and *Calyx* as in the sterile flower. *Germen* (see fig. 4.) superior, egg-shaped, sessile or stalked. *Style* terminal, permanent. *Stigmas* 2, notched and obtuse, or cloven and acute, spreading. *Capsule* (see figs. 5 & 6.) egg-shaped, blunt, or tapering, of 1 cell, and 2 valves. *Seeds* numerous, minute, oval, tufted, with soft, simple, upright hairs.

The entire scale of the *calyx*, destitute of a corolla; the *sterile flowers* with from 1 to 5 stamens, or sometimes more, with 1 or more glands close to them; the *fertile flowers* with 1 pistil, either sessile or stalked, with 1 or more glands inserted close to it; and the 1-celled, 2-valved *capsule;* will distinguish this from other genera, with imbricated catkins, in the same class and order.

Seventy species British.

SA'LIX PURPU'REA. Purple Willow. Bitter Purple Willow.

Spec. Char. Monandrous. Branches decumbent. Leaves spear-shaped, broadest upwards, tapering below, serrated, smooth. Germens egg-shaped, very pubescent, sessile. Stigma egg-shaped, nearly sessile.

Engl. Bot. t. 1388.—Salict. Wob. p. 1. t. 1.—Linn. Sp. Pl. p. 1444.; Fl. Suec. p. 347.—Huds. Fl. Angl. (2nd edit.) p. 427.—Willd. Sp. Pl. v. iv. pt. ii. p. 672.—Sm. Fl. Brit. v. iii. p. 1039.; Engl. Fl. v. iv. p. 187.—With. (7th ed.) v. ii. p. 56.—Gray's Nat. Arr. v. ii. p. 227.—Lindl. Syn. p. 232.—Hook. Brit. Fl. p. 413.—Macr. Man. Brit. Bot. p. 212.—Loud. Arb. et Frutic. Brit. v. iii. p. 1490. figs. 1294 and f. 1. in p. 1603.—Lightf. Fl. Scot. v. ii. p. 598.—Relh. Fl. Cant. (3rd ed.) p. 402.—Trans. of Linn. Soc. v. vi. p. 113.—Purt. Midl. Fl. v. iii. p. 74.—Hook. Fl. Scot. p. 277.—Fl. Devon. pp. 156 & 133.—Walker's Fl. of Oxf. p. 289.—Irv. Lond. Fl. p. 286.—Cow. Fl. Guide, p. 46.—Baines' Fl. of Yorksh. p. 92.—Mack. Catal. of Pl. of Irel. p. 84.; Fl. Hibern. p. 243.—*Salix monandra*, Curt. Fl. Lond. t. . f. 5.—Abbot's Fl. Bedf. p. 212.—*Salix rubra, minimæ fragilis, folio longo angusto*, Bauh. Hist. v. i. pt. ii. p. 215.

Fig. 1. Catkin of Sterile Flowers.—Fig. 2. A single Sterile Flower.—Fig. 3. Catkin of Fertile Flowers.—Fig. 4. A single Fertile Flower.—Fig. 5. Capsule, with seed.—Fig. 6. The same after the seed has escaped.—Fig. 7. Branch in leaf.—Figs. 2, 4, 5, & 6, *magnified.*

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[*] From *sal, near;* and *lis, water,* in Celtic.

[†] See folio 143, note †.

[‡] See folio 50, note †.

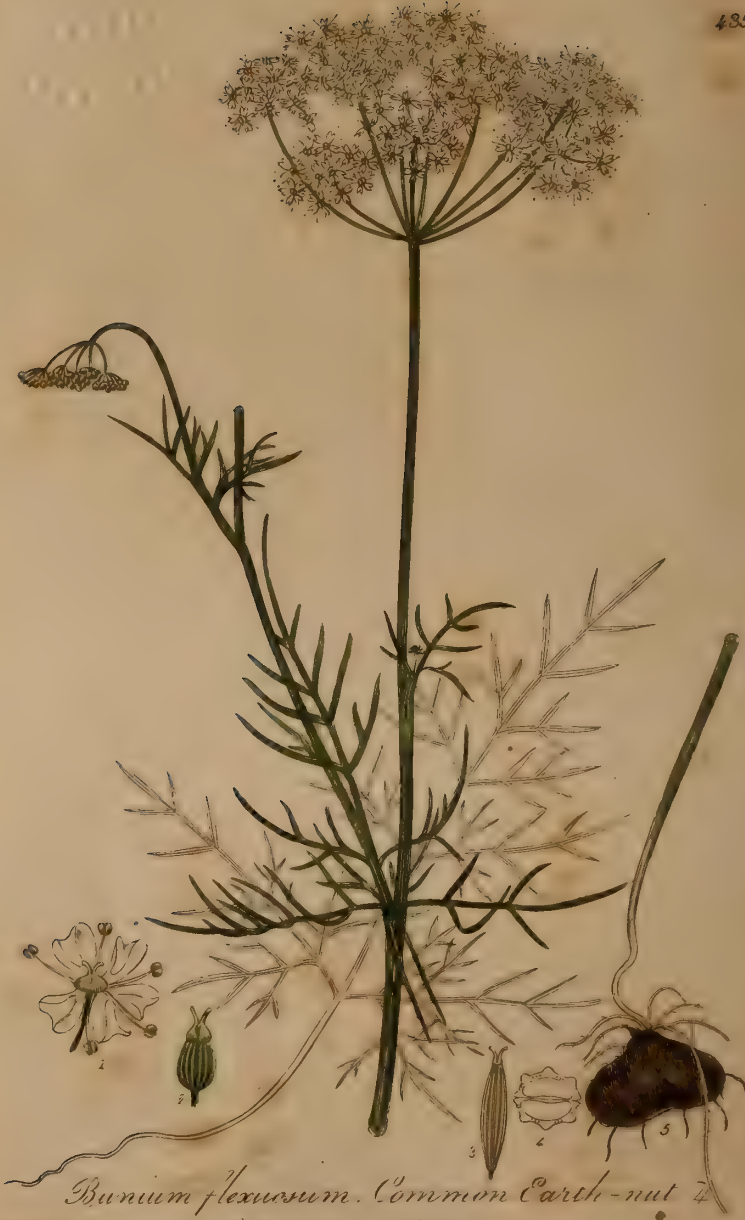
Localities.—In low meadows, about the banks of rivers and watery ditches; not common.—*Oxfordsh.* Side of the ditch round Christ Church Meadow; undoubtedly planted there: W. B.—*Beds.* Thurleigh: Rev. C. Abbot.—*Cambridgesh.* Sides of ditches: Rev. R. Relhan.—*Devon.* Sides of streams, occasionally: *Fl. Devon.*—*Leicestersh.* In moist woods, and withy beds: Dr. Pulteney.—*Norfolk;* In meadows between Norwich and Thorpe: Mr. Crowe. King-street Meadows, Norwich: *ib.*—*Northamptonsh.* Peakirk; and Thurnby: Martyn.—*Surrey;* Between Vauxhall and Nine Elms, by the Thames side: Martyn.—*Yorkshsh.* About Beverley: Teesdale. Near Nunwick by Ripon: Mr. Brunton. In low grounds between Beverley and Hull: Mr. Baines.—SCOTLAND. *Dumfries-shire;* Banks of the Esk, near Netherby; in Eskdale: Lightfoot.—*Forfarsh.* In the lower parts of the county: Mr. Don.—*Roxburghsh.* North bank of the Tweed, opposite Melrose: Mr. Maughan.—IRELAND. Sea-side, county of Mayo: *Mack. Catal.* About Newtownards, and between Stewartstown and Moneymore: Mr. Templeton. Ditch-bank near Garvagh, county of Derry: Mr. D. Moore.

A Shrub.—Flowers in February and March.

Stem 3 or 4 feet high, with long, slender branches, spreading widely, and, if not supported, trailing on the ground, very smooth, of a rich and shining purple, with a somewhat glaucous hue. *Leaves* partly opposite, partly alternate, on short, smooth petioles, without stipulas, spear-shaped, broadest above the middle, tapering below, slightly serrated, smooth, of a glaucous green, especially on the under side. The *catkins* appear earlier than the leaves, and often on different branches; they are about an inch long, cylindrical, and bluntish; their scales inversely egg-shaped, hairy, and black in their upper half. *Nectary* a single gland opposite to each scale. *Filament* always solitary, simple, smooth, and about twice the length of the scale. *Anther* tawny, of 4 lobes, and as many cells. *Germen* (fig. 4.) sessile, small, broadly elliptical, silky, rather longer than its scale, which is shorter than that of the sterile flower (fig. 2). *Style* scarcely any till after flowering, when it is slightly protruded. *Stigmas* egg-shaped, thick, blunt, permanent. *Capsules* (figs. 5 & 6.) hoary, densely downy. *(Sm. Engl. Fl.)*

This, according to Sir J. E. Smith, is a very valuable Osier for fine basket-work, but more especially for platting into low close fences, to keep out hares and rabbits, the leaves and bark being so intensely bitter, that those animals will not touch either. The twigs are so long, tough, and flexible, that they may be interwoven into any shape; and a fence of this kind is scarcely inferior to one made of wire.

The *Natural Order* Salicineæ is composed of dicotyledonous *trees* or *shrubs*, whose leaves are alternate, simple, and furnished with deciduous or persistent *stipulæ.* The flowers are separated, and are either monœcious, or diœcious; and collected into cylindrical or egg-shaped catkins. The *sterile flowers* are composed of from 1 to 20 stamens, placed in the axilla of a scale-like *calyx* (*bractea* of some authors), or upon its upper surface. The *fertile flowers* consist of a fusiform germen, with a simple style, terminated by two, notched or 2-parted, *stigmas*, situated in the axilla of a scale-like *calyx*. The *fruit* is coriaceous, 1- or 2-celled, containing many *seeds* surrounded by long silky hairs, and opening by two valves. The *embryo* is erect, and the radicle inferior.—The bark of the *Salicineæ* is generally astringent and tonic. It is employed in tanning; and that of some species, especially of *Salix purpurea*, *S. Helix*, and *S. Russelliana*, has acquired celebrity as a substitute for Peruvian bark in fevers. The only British genera in this order are *Salix* and *Populus.*



Bunium flexuosum. Common Earth-nut ♃

Mathews Del & Sc
Pub.d by W Baxter Botanic Garden Oxford 1842

BU'NIUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* all uniform; the innermost many of them barren. *Calyx* an obsolete margin. *Corolla* (fig. 1.) of 5, inversely heart-shaped, nearly equal petals, with inflexed points. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, longer than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, ribbed, smooth. *Styles* (see fig. 2.) 2, awl-shaped; egg-shaped, angular, and much swelled, at the base; permanent, more or less spreading. *Stigmas* blunt, somewhat capitate. *Fruit* (fig. 3.) contracted at the sides, linear-oblong, crowned with the conical bases of the nearly straight styles. *Carpels* with 5 equal, slender, obtuse ribs, with many *vittæ* in the interstices. *Seeds* taper, convex, flat in front. *Universal Involucrum* none; *partial* of few leaves. *Flowers* white.

The obsolete *calyx;* the linear-oblong, smooth *fruit*, crowned with the conical bases of the nearly straight *styles;* and the *carpels* with 5 slender, obtuse *ribs*, with many *vittæ* in the interstices; will distinguish this from other genera in the same class and order.

One species British.

BU'NIUM FLEXUO'SUM. Flexuous Earth-nut. Pig-nut. Ar-nut. Knipper-nut. Hawk-nut. Jur-nut. Ground-nut. Earth Chestnut.

SPEC. CHAR. Root a small, solitary tuber. Stem slender, tapering and zigzag at the base. Leaves very few, much divided into very slender strap-shaped segments. Style straight, conical at the base.

Engl. Bot. t. 988.—With. (2nd ed.) v. i. p. 276.—Sym. Syn. Pl. p. 70.—Sm. Fl. Brit. v. i. p. 301.; Engl. Fl. v. ii. p. 54.—With. (7th edit.) v. ii. p. 369.—Hook. Brit. Fl. (4th edit.) p. 114.—Sibth. Fl. Oxon. p. 24.—Abbot's Fl. Bedf. p. 60.—Thomp. Pl. of Berw. p. 20.—Davies' Welsh Bot, p. 27.—Purt. Midl. Fl. v. i. p. 141.—Relh. Fl. Cant. (3rd ed.) p. 114.—Johnst. Fl. Berw. v. i. p. 68.—Winch's Fl. of Northumb. and Durh. p. 18.—Walker's Fl. of Oxf. p. 77.—Bab. Fl. Bath. p. 21.; Prim. Fl. Sarn. p. 42.—Dick. Fl. Abred. p. 30.—Irv. Lond. Fl. p. 196.—Luxf. Reig. Fl. p. 24.—Cow. Fl. Guide, p. 25.—Baines' Fl. of Yorksh. p. 46.—Leight. Fl. of Shropsh. p. 131.—Gul. Catal. of Pl. of Banb. p. 6.—*Bunium bulbocastanum*, Huds. Fl. Angl. (2nd ed.) p. 122.—With. (1st ed.) v. i. p. 164.—Lightf. Fl. Scot. v. i. p. 156.—Curt. Fl. Lond. t. 273.—Relh. Fl. Cant. (1st edit.) p. 118.—Hook. Fl. Scot. p. 88.—Grev. Fl. Edin. p. 63.—Fl. Devon. pp. 48 & 166.—Loud. Ency. of Gard. (new ed.) p. 882. parag. 4709.—Mack. Catal. of Pl. of Irel. p. 27.—*Bunium denudatum*, De Cand. Fl. Fr. v. iv. p. 325.; Prod. v. iv. p. 117.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 290.—Macr. Man. Brit. Bot. p. 98.—*Bu-*

Fig. 1. A separate Flower.—Fig. 2. Germen, Styles, & Stigmas.—Fig. 3. Fruit.—Fig. 4. Transverse section of ditto.—Fig. 5. Tuberous Root.—*All*, except fig. 5, *magnified.*

* From *bounos*, Gr. a *hill*, or *elevated spot;* the plant loving dry situations.

† See folio 48, note †. ‡ See folio 235, *a*.

nium minus, Gray's Nat. Arr. v. ii. p. 514.—*Bunium majus*, Gouan. Illustr. p. 10.—Willd. Sp. Pl. v. i. pt. II. p. 1394.—*Bulbocastanon minus*, Johns. Gerarde, p. 1064.—Bauh. Pin. p. 162.—*Bulbocastanum*, Ray's Syn. p. 209.—*Conopodium flexuosum*, Lind. Syn. p. 121.—Hook. Brit. Fl. p. 126.—Mack. Fl. Hibern. p. 121.

LOCALITIES.—In grassy pastures, on heaths, and in woods, especially on a gravelly soil; common.

Perennial.—Flowers in May and June.

Root a solitary, globose, or somewhat irregularly-shaped, tuber; of a chestnut-colour outside, white within, solid, producing from the sides and lower part a few slender fibres. *Stem* from one to two feet high, solitary, upright, roundish, striated, smooth; tapering, zigzag, and whitish at the base, to a greater or less extent under ground; sometimes, though rarely, it is straight and short in that part, when the root happens to be very shallow in the ground. *Leaves* with long, very narrow, pointed, entire segments; those from the root twice or thrice pinnatifid, on long, slender *foot-stalks*, tapering and zigzag under ground; those on the stem twice or thrice ternate, scattered, nearly sessile, clasping the stem with their smooth, striated sheath, which is membranous and whitish at the margins. *Umbels* several, terminal, drooping before the flowers open, afterwards upright; of 7, or more, smooth, slender, straight, stiff rays; those of the *partial umbels* still more numerous. *General Involucrum* of from 1 to 3 leaves, often entirely wanting; *partial one* of several leaves. *Flowers* white, all regular, or very nearly so, and all perfect, though some of the central ones bear no seed. *Calyx* mostly wanting, or obsolete; sometimes of 2 or 3 short, sharp, spreading, permanent teeth. *Fruit* oblong, moderately ribbed, a little narrower upwards, and terminated with the straight *styles*, which have conical, very tumid, bases.

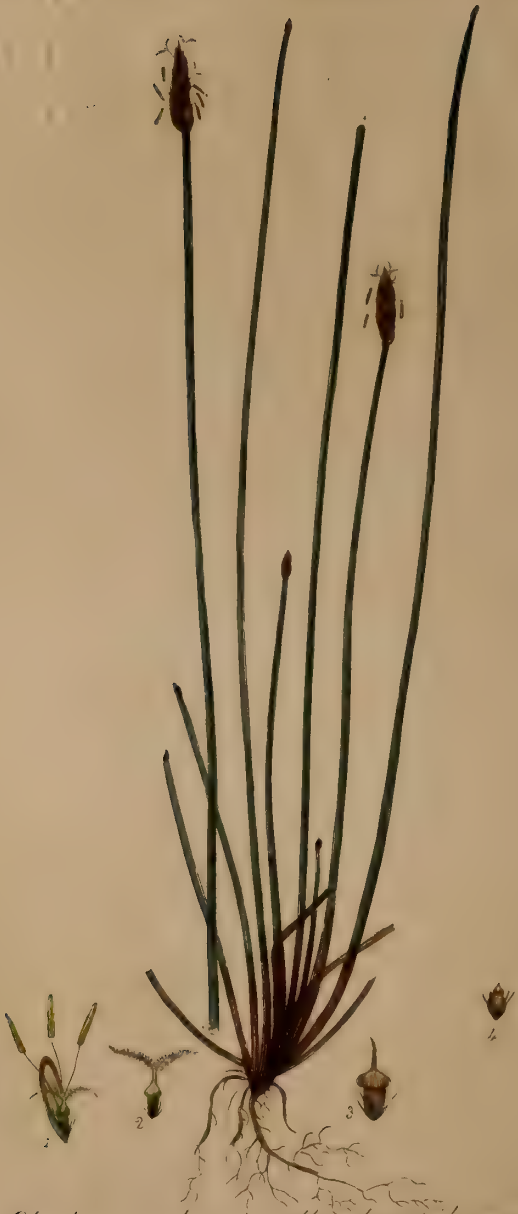
The roots of this plant are aromatic, sweet, and mucilaginous, with some acrimony. They are frequently dug up and eaten by children. SHAKSPEARE, in his "Tempest," makes CALIBAN say—

> "I pr'ythee, let me bring thee where crabs grow;
> And I with my long nails will dig thee *pig-nuts;*
> Shew thee a jay's nest, and instruct thee how
> To snare the nimble marmozet," &c.

Swine are very fond of these roots, and will soon become fat with feeding on them; and it is to procure these roots that pigs root up the earth in pastures, &c.

RAY, in "The Wisdom of GOD manifested in the Works of the Creation," says, "I have myself observed, that in pastures where there are earth-nuts to be found up and down in several patches, tho' the roots lie deep in the ground, and the stalks be dead long before and quite gone, the swine will by their scent easily find them out, and root only in those places where they grow." This is, as Dr. WITHERING observes, "a singular and instructive example of the instinct with which the Creator has provided animals, in order to supply their wants."—When boiled, these roots are very pleasant and delicious, and are supposed to afford great nourishment. Thus prepared, they are said to be eaten in Holland and the Alps, and in some parts of England in soup or broth. Roasted they are even superior to chestnuts. In Sweden they are an article of commerce.

The true *Bunium bulbocodium* is a very different plant from ours, and has never been found wild in Britain.



Eleocharis palustris. Marsh spike rush ♃

Mathews Del & Sc

Pub.d by W. Baxter Botanic Garden Oxford 1841

ELEO'CHARIS*.

Linnean Class and Order. Tria'ndria†, Monogy'nia.

Natural Order. Cypera'ceæ, *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—Cyperoideæ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—Cyperales; sect. Cyperinæ; type, Scirpaceæ; Burn. Outl. of Bot. v. i. pp. 354 & 357.—Calamariæ, *Linn.*

Gen. Char. *Spike* terminal, solitary, naked; of numerous *flowers,* all perfect. *Glumes* (see fig. 1.) imbricated in every direction, expanded, uniform. *Corolla* none. *Filaments* (see fig. 1.) 3, hair-like. *Anthers* (see fig. 1.) strap-shaped. *Germen* (see fig. 2.) compressed. *Style* (see figs. 2 & 3.) dilated, or bulbous, at the base, and united by a suddenly contracted joint, with the germen. *Stigmas* 2 or 3. *Fruit* (see fig. 4.) compressed, bluntly 3-cornered, crowned with the permanent bulbous base of the style. *Bristles (perianth* of Brown*)* (see fig. 1 to 4.) from 2 to 10, finely toothed, beneath the germen, rarely wanting.

The simple, solitary, naked, many-flowered *spike;* the 1-valved *glumes,* imbricated on all sides; the *perianth* of from 2 to 10 rough bristles; and the lenticular, or bluntly 3-cornered *seed,* crowned with the hardened, dilated base of the *style;* will distinguish this from other genera, with inferior, glumaceous flowers, in the same class and order.

Six species British.

ELEO'CHARIS PALU'STRIS. Marsh Spike-rush. Creeping Spike-rush. Marsh Club-rush.

Spec. Char. Root creeping. Stem rounded. Stigmas two. Fruit roundish-obovate, most convex on one side, shorter than the four bristles. Outer glume smaller than the rest.

Sm. Engl. Fl. v. i. p. 63.—With. (7th ed.) v. ii. p. 105.—Gray's Nat. Arr. v. ii. p. 77.—Hook. Fl. Scot. p. 23.—Macr. Man. Brit. Bot. p. 248.—Johnst. Fl. Berw. v. i. p. 16.—Winch's Fl. of Northumberl. and Durh. p. 4.—Walker's Fl. of Oxf. p. 14.—Bab. Fl. Bath. p. 53.; Prim. Fl. Sarn. p. 101.—Dick. Fl. Abred. p. 21.—Irv. Lond. Fl. p. 88.—Luxf. Reig. Fl. p. 5.—Cow. Fl. Guide, p. 29.—Baines' Fl. of Yorksh. p. 111.—Leight. Fl. of Shropsh. p. 33.—Mack. Fl. Hibern. p. 320.—*Heliocharis palustris,* Lindl. Syn. p. 280.—*Scirpus palustris,* Linn. Sp. Pl. p. 70.—Engl. Bot. t. 131.—Huds. Fl. Angl. (2nd ed.) p. 17.—Willd. Sp. Pl. v. i. pt. I. p. 291.—Sm. Fl. Brit. v. i. p. 48.—Leers' Fl. Herbor. p. 10. t. 1. f. 3.—Lightf. Fl. Scot. v. i. p. 87.—Rel. Rudb. p. 27. f. 2.—Sibth. Fl. Oxon. p. 22.—Abbot's Fl. Bedf. p. 10.—Thomps. Pl. of Berw. p. 7.—Davies' Welsh Bot. p. 6.—Purt. Midl. Fl. v. i. p. 63.—Relh. Fl. Cant. (3rd ed.) p. 21.—Hook. Fl. Scot. p. 18.—Grev. Fl. Edin. p. 10.—Fl. Devon. pp. 7 & 115.—Murr. Northern Fl. p. 31.—Gull. Catal. of Pl. of Banbury, p. 2.—Mack. Catal. of Pl. of Irel. p. 11.—*Scirpus Equiseti capitulo majori,* Ray's Syn. p. 429.—Scheuchz. Agr. p. 360.—*Juncus equiseti capitulis,* Bauh. Theatr. p. 186.—*Juncus minor capitulis equiseti,* Johnson's Gerarde, p. 35. n. 5. figured at p. 1631, Appendix.—*Juncus aquaticus capitulis Equiseti,* Park. Theatr. Bol. p. 1196, with a figure.

Fig. 1. A single Flower.—Fig. 2. Germen, Style, and Stigmas, and hypogynous Bristles.—Fig. 3. Same farther matured.—Fig. 5. Fruit, crowned with the bulbous base of the style, and accompanied by the bristles at the base.—*All more or less magnified.*

* From *elos,* Gr. a *marsh;* and *chairo,* Gr. to *delight;* from its place of growth.

† See folio 56, note †.

LOCALITIES.—Sides of ditches, marshy places, and wet meadows; common. Perennial.—Flowers in June and July.

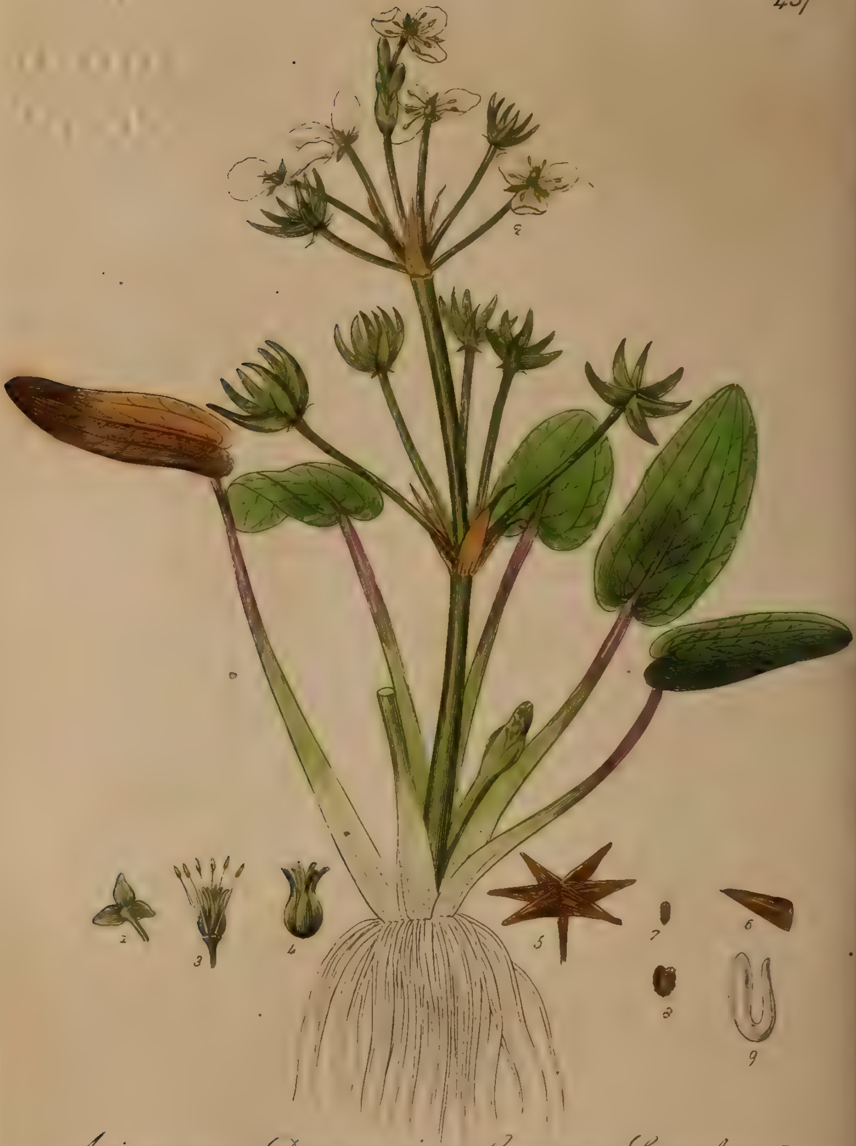
Root creeping, black, shining, and sending out, at intervals, slender, branching fibres. *Culms* many together, from 6 inches to a foot high, upright, nearly cylindrical, smooth and shining, without any central pith, and consisting of large membranous tubes, surrounded by smaller ones, each invested at the base with 2 or 3 tight, entire, cylindrical, reddish, shining sheaths. *Leaves* none. *Spike* egg-shaped or oblong, pointed, about half an inch long. *Glumes* (see fig. 1.) brown, bluntly keeled, egg-shaped, acute, with a membranous border. *Stamens* (see fig. 1.) 3, hair-like. *Anthers* (see fig. 1.) strap-shaped, pale yellow, loosely spreading. *Bristles* 4, occasionally 5 or 6, longer than the germen, and clothed with deflexed teeth, except at the base, which is slightly dilated. *Germen* (see fig. 2.) egg-shaped. *Style* (see fig. 2) 1, dilated and bulbous at the base (see figs. 2 & 3.), but its point of attachment with the germen contracted. *Stigmas* (see fig. 2.) only 2, downy, spreading, as long as the style. *Fruit* (see fig. 4.) brown and shining, inversely egg-shaped, tumid at each side, but most so on that next the glume; crowned with the brown, wrinkled, compressed, permanent, unpolished base of the style, and subtended by from 4 to 6 bristles, about its own length.

Goats and horses are said to eat this plant; cows and sheep to refuse it. Swine devour the roots greedily when fresh, (for which purpose they are collected by the Swedish peasants), but will not touch them when dry.

The *Natural Order* CYPERACEÆ is composed of glumaceous, monocotyledonous, herbaceous *plants*, which generally grow in moist places, and on the margins of lakes and streams. Their *stems* are 3-cornered or cylindrical, with or without joints. Their *leaves* are sheathing, and their *sheaths* entire and not slit. The *flowers* are perfect or divided, consisting of imbricated solitary bracteæ (see fig. 1.), very rarely enclosing other bracteæ called *glumes*. The *stamens* are situated below the germen, and are definite, as 1, 2, 3, 4, 5, 6, 7, 10, or 12; but generally 3. The *anthers* are fixed by their base, and are entire and 2-celled. The *ovary* is 1-seeded, and often surrounded by bristles called Hypogynous Setæ; these bristles have been considered, by some authors, as the true *perianth*, and styled *perigynium*. The *ovule* is erect; the *style* single, generally trifid, rarely bifid; the *stigmas* entire; and the *fruit* (*nut* of LINDLEY, *achenium* of HOOKER) crustaceous or bony; with the *embryo* enclosed in the base of a copious *albumen*.

The *Cyperaceæ* are of little importance as affording food or medicine to man. The roots of *Cyperus longus* are said to be tonic. The celebrated *Papyrus antiquorum*, from which the chief of the paper used by the ancients was procured, belongs to this *natural order*.

The British genera are, 1. *Cyperus;* 2. *Cladium;* 3. *Schœnus*, t. 268.; 4. *Rhynchospora*, t. 396; 5. *Scirpus*, t. 264; 6. *Blysmus*, t. 308.; 7. *Eleocharis*, t. 436.; 8. *Eriophorum*, t. 427.; 9. *Elyna;* and 10. *Carex*.



Actinocarpus Damasonium. Common Star-fruit. ♃

Mathews Del. & Sc.
Pub.d by W. Baxter Botanic Garden Oxford 1841.

ACTINOCA'RPUS[*].

Linnean Class and Order. HEXA'NDRIA[†], HEXAGY'NIA.

Natural Order. ALISMA'CEÆ[‡], *Dr. R. Brown.*--Lindl. Syn. p. 253.; Introd. to Nat. Syst. of Bot. p. 253.—Rich. by Macgilliv. p. 399.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 271.—Hook. Brit. Fl. (4th edit.) p. 421.—LILIALES; sect. ALISMINÆ; type, ALISMACEÆ; Burn. Outl. of Bot. v. i. pp. 418, 422, & 423.—JUNCI, sect. 3. Juss. Gen. Pl. pp. 43 & 46.—Sm. Gram. of Bot. p. 72.—TRIPETALOIDEÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 3 egg-shaped, concave, permanent sepals. *Corolla* (see fig. 2.) of 3 roundish, flat, widely spreading, deciduous petals, much larger than the sepals, and alternate with them. *Filaments* (see fig. 3.) 6, awl-shaped, shorter than the corolla. *Anthers* roundish. *Germens* (fig. 4.) superior, from 6 to 8. *Styles* (see figs. 3 & 4.) simple, oblique. *Stigmas* blunt. *Capsules* (figs. 5 & 6.) combined at the base, spreading in a radiated manner, 2-seeded. *Seeds* (figs. 7 & 8.) oblong, blunt, without albumen. *Embryo* (see fig. 9.) undivided, much curved.

The *calyx* of 3 permanent sepals; the *corolla* of 3 petals; the 2-seeded *capsules*, combined at the base, and spreading in a star-like manner; and the *seeds* with a undivided much curved *embryo;* will distinguish this from other genera in the same class and order.

It differs from *Alisma* (t. 337.) in the capsules being combined at the base, and spreading in a star-like manner.

One species British.

ACTINOCA'RPUS DAMASO'NIUM. Common Star-fruit. Star-headed Water-Plantain. Star-headed Thrum-wort.

SPEC. CHAR. Leaves oblong, heart-shaped at the base, 5-nerved. Capsules 6, awl-shaped, compressed, spreading, opening longitudinally.

ACTINOCA'RPUS (*Brown's Prod.* p. 342.) DAMASO'NIUM, Hook. in Fl. Lond. N. S.; Brit. Fl. p. 172.—Irv. Lond. Fl. p. 108.—Luxf. Reig. Fl. p. 32.—Leight. Fl. of Shropsh. p. 157.—*Alisma Damasonium*, Linn. Sp. Pl. p. 486.—Engl. Bot. t. 1615.—Curt. Fl. Lond. t. .—Huds. Fl. Angl. (2nd ed.) p. 159.—Willd. Sp. Pl. v. ii. pt. I. p. 277.—Sm. Fl. Brit. v. i. p. 401.; Engl. Fl. v. ii. p. 204.—With. (7th ed.) v. ii. p. 464.—Lindl. Syn. p. 253.—Macr. Man. Brit. Bot. p. 222.—Rev. G. E. Smith's Pl. of S. Kent, p. 23.—Pamp. Pl. of Battersea, p. 8.—Walker's Fl. of Oxf. p. 106.—*Damasonium stellatum*, Dalech. Hist. p. 1058.—Pers. Syn. Plant. v. i. p. 400.—*Damasonium Dalechampii*, Gray's Nat. Arr. v. ii. p. 217.—*Damasonium stellatum Dalechampii*, Ray's Syn. p. 272.—*Plantago aquatica minor stellata*, Johnson's Gerarde, p. 417.

Fig. 1. Calyx.—Fig. 2. Corolla,—Fig. 3. Stamens and Pistils.—Fig. 4. Germens.—Fig. 5. Fruit, consisting of six capsules, combined at the base.—Fig. 6. A separate Capsule.—Figs. 7 & 8. Seed.—Fig. 9. The curved Embryo.—Figs. 2, 4, 8, and 9, *magnified.*

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[*] From *aktin*, Gr. *a ray;* and *karpos*, Gr. *fruit;* in consequence of its curiously radiated fruit resembling a *star-fish.* HOOKER.

[†] See folio 33, note †.

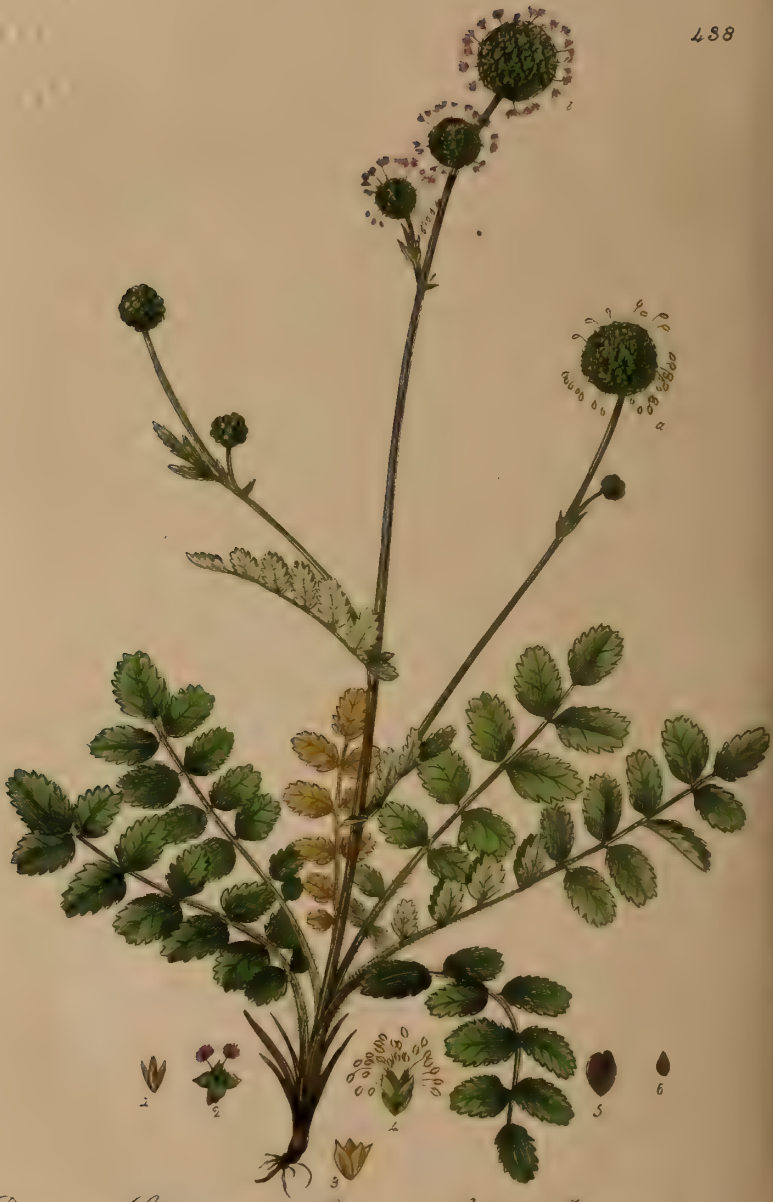
[‡] See folio 109, *a.*

Localities.—In ditches and pools, mostly on a gravelly soil; but not common.—*Berks;* On Winkfield Plain, near Windsor: Rev. Dr. Goodenough. Ditches about Southcote, near Reading: Mr. Fardon. Bracknel near Windsor: Rev. E. F. Witts.—*Cornwall;* Between Penzance and Marazion: *Mag. Nat. Hist.* Mr. Watson could not find it there.—*Essex;* In pools and gravel-pits on Epping Forest, near Walthamstow, not uncommon; and in a pond near Rumford, as mentioned by Ray: Mr. E. Forster, jun. Plentiful in the pools about Woodford: L. W. Dillwyn, Esq. Wanstead Park: Mr. Sowerby. Ponds on Epping Forest, by the sixth milestone on the Lea-Bridge road, Wanstead: N. J. Winch, Esq.—*Herts;* Dropmore Common: N. J. Winch, Esq. Totteridge Green: Mr. J. Woods, jun.—*Kent;* Bogs on Ashdown Forest: Mr. T. F. Forster, jun. In a pool under the Cliff between Folkstone and Sandgate, sparingly: L. W. Dillwyn, Esq. In a pond at East Church in Shepey: E. Jacob, Esq. in *Pl. Faversh.* On Waterdown Forest, and in the ponds in Abergavenny Park: *Fl. Ton.—Middlesex;* In a little bog at Harefield: Blackstone. Iver Heath towards Denham: Martyn. Near Hammersmith: Mr. Teesdale. Finchley Common: Mr. J. Woods, jun. Hounslow Heath; and about London in several places: Curtis.—*Shropshire;* Ellesmere Mere: Rev. A. Bloxam.—*Suffolk;* At Framlingham: Rev. Mr. Crabbe.—*Surrey;* Abundant on Battersea and Wandsworth Commons: Mr. W. Pamplin, jun. and Mr. W. H. Baxter. New Pond, on Earlswood Common: Mr. G. Luxford. Ponds on Clapham Common; Hedge Court Pond; in a pond on Esher Common, between Claremont Park and Claygate; in a small pond on Ditton Common, just in front of Ember Grove; near Shilton's Cottages, on the same Common; also on the opposite side of the Portsmouth road, in the bed of the Rye, near to the Turnpike House. Claygate, in a small pond by the road-side leading to the Telegraph Hill; Coulsdon; near Cobham; on Putney Heath; pit almost opposite the Wells at Streatham; on Tooting and Leatherhead Commons; and in ponds near Ewell: N. B. G.—*Sussex;* Pits on St. John's, Chailey, and Broadmere Commons; and at Henfield: N. B. G. Between Sheffield Arms and Horsted Keynes: Mr. E. Jenner.

Perennial.—Flowers in June and July.

Root of many long pale fibres. *Leaves* all radical, floating, oblong, bluntish, somewhat heart-shaped at the base, 5-nerved, quite entire, smooth and glossy, like every other part of the plant. *Petioles (leaf-stalks)* long, almost semicylindrical, broad and membranous at the base, tapering upwards. *Scape (flower-stalk,)* from 6 inches to a foot high, bearing 1 or 2 whorls of flowers. *Petals* white, very delicate, inversely heart-shaped, each having a yellow spot at the base. *Capsules* (fig. 5.) 6, spreading in the form of a star, awl-shaped, compressed, 1- or 2-seeded, closely combined at the base, so as to appear like a single fruit. *Seeds* (figs. 7 & 8.) oblong, tuberculated and transversely striated, compressed, with a deep furrow on each side, occasioned by the form of the embryo within, which is cylindrical and bent double, somewhat like a horse-shoe (fig. 9).

This plant is a native of France and Siberia, as well as of England; it is subject to much variation in size, according to the depth of water in which it grows.—The specimen figured was sent to me by my very kind friend Mr. E. Jenner, of Lewes, to whom I am indebted for several other rare plants.



Poterium Sanguisorba. Common Salad-Burnet. ♃

Mathews Del & Sc.   Pub^d by W Baxter, Botanic Garden Oxford 1840

POTE'RIUM*.

Linnean Class and Order. MONŒ'CIA†, POLYA'NDRIA‡.

Natural Order. ROSA'CEÆ§; sect. SANGUISORBEÆ; Juss. Gen. Pl. pp. 334 & 336.—Sm. Gram. of Bot. pp. 171 & 172.—Lindl. Syn. pp. 88 & 102.—Rich. by Macgilliv. pp. 528 & 530—Loud. Hort. Brit. p. 512.—Mack. Fl. Hibern. pp. 85 & 105.—SANGUISORBEÆ, Lindl. Introd. to Nat. Syst. of Bot. p. 80.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 589.—ROSALES; sect. ROSINÆ; subsect. ROSIANÆ; type, SANGUISORBACEÆ; Burn. Outl. of Bot. pp. 614, 683, 699, & 707.—SENTICOSÆ, *Linn.*

GEN. CHAR.—*Flowers* in a head, monœcious or polygamous. *Sterile Flowers* (see fig. 4). *Calyx* (fig. 3.) of 3 egg-shaped, coloured, spreading, deciduous sepals. *Corolla* (fig. 4.) of 1 petal, tubular, in 4 deep, egg-shaped, concave, spreading segment, permanent. *Filaments* (see fig. 4. & *a.*) numerous, 30 to 50, hair-like, flaccid, much longer than the corolla. *Anthers* roundish, 2-lobed. *Fertile Flowers* (see fig. 2. & *b.*) above the others. *Calyx* as in them. *Corolla* (fig. 2.) of 1 petal, wheel-shaped; tube short, roundish, closed at the mouth; limb in 4 deep, egg-shaped, flat, reflexed segments, permanent. *Germens* 2, egg-oblong, included in the tube of the corolla. *Styles* (see fig. 2.) 2, hair-like, coloured, much longer than the limb of the corolla. *Stigmas* (see fig. 2.) tufted, coloured. *Pericarps* (fig. 5.) 2, 1-seeded, invested with the hardened, 4-angled tube of the corolla. *Seed* inverted.

The 3-leaved *calyx;* the monopetalous *corolla,* with a deeply 4-cleft limb; the *sterile flower,* with from 30 to 50 *stamens;* and the *fertile one* with 2 *pistils,* and 2 1-seeded *pericarps* invested with the hardened 4-angled tube of the calyx; will distinguish this from other genera in the same class and order.

One species British.

POTE'RIUM SANGUISO'RBA. Common Salad-Burnet. Garden-Burnet.

SPEC. CHAR. Spines none. Stem somewhat angular.

Engl. Bot. t. 860.—Curt. Fl. Lond. t. .—Mart. Fl. Rust. t. 69.—Linn. Sp. Pl. p. 1411.—Huds. Fl. Angl. (2nd ed.) p. 421.—Willd. Sp. Pl. v. iv. pt. I. p. 421.—Sm. Fl. Brit. v. iii. p. 1025.; Engl. Fl. v. iv. p. 147.—With. (7th ed.) v. iii. p. 663.—Lindl. Syn. p. 103.—Hook. Brit. Fl. p. 407.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 595.—Loud. Encycl. of Gard. (new ed.) p. 866. parag. 4480.—Macr. Man. of Brit. Bot. p. 70.—Sibth. Fl. Oxon. p. 168.—Abbot's Fl. Bedf. p. 209.—Dicks. Pract. Agr. v. ii. p. 837.—Davies' Welsh Bot. p. 90.—Purt. Midl. Fl. v. ii. p. 463.—Relh. Fl. Cant. (3rd edit.) p. 394.—Hook. Fl. Scot. p. 273.—Fl. Devon. p. 154.—Johns. Fl. of Berw. v. i. p. 206.—Winch's Fl. of Northumb. and Durh. p. 61.—Walker's Fl. of Oxf. p. 281.—Bab. Fl. Bath. p. 16.—Prim. Fl. Sarn. p. 34.—Irv. Lond. Fl. p. 194.—Luxf. Reig. Fl. p. 81.—Cow. Fl. Guide, p. 42.—Baines' Fl. of Yorksh. p. 40.—Leight. Fl. of Shropsh. p. 473.—Mack. Catal. Pl. of Irel. p. 82.; Fl. Hibern. p. 106.—*Poterium minus*, Ray's Syn. p. 203.—Gray's Nat. Arr. v. ii. p. 575.—*Pimpinella hortensis*, Johnson's Gerarde p. 1045.

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a. A Head of Sterile Flowers; *b.* A Head of Fertile ones.—Figs. 1 & 3. Calyx.—Fig. 2. A single Fertile Flower.—Fig. 4. A single Sterile Flower.—Fig. 5. The two Pericarps invested with the hardened permanent Calyx.—Fig. 6. A separate Pericarp.

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[*] Some say that this is the real toper's plant, and that hence its name *Poterium*, from the custom of infusing it in various liquors. BURNETT.

[†] See folio 93, note †. [‡] See folio 53, note †. [§] See folio 313, *a.*

LOCALITIES.—On hilly pastures, &c. in a dry calcarious soil; frequent.

Perennial.—Flowers from April to July.

Root woody, whitish, penetrating deep into the earth. *Stems* from 6 inches to a foot high, or more, upright, angular, smooth, often of a reddish colour, branched, herbaceous, leafy, many-flowered. *Leaves* pinnate, of several pairs of roundish, or egg-shaped, deeply serrated, veiny leaflets, with an odd one, all of a deep, somewhat glaucous, green, smooth, but not shining, the nerves on the under side hairy. *Stipulas* joined to the base of the leafstalks in pairs, sharply cut. *Flowers* dull purple, in little globose heads, the uppermost *fertile*, the lower *sterile*, or sometimes perfect. *Filaments* very long, and often red. *Styles* hair-like, and terminated by the tufted stigma, which is bright crimson, and very elegant. *Fruit* (tube of the corolla) 4-cornered, wrinkled.

The leaves taste and smell like cucumber, and give that flavour to salads, for which purpose the young leaves are sometimes used. They are also occasionally put into soups, and they form a favourite herb for cool tankards. It has been sometimes cultivated in an agricultural point of view, especially on a calcarious soil, and it is stated to prove an excellent winter pasture, when hardly any thing else vegetates. The severest frost never injures this plant, and the oftener it is fed the thicker are its leaves, which spring constantly from its root, and their flat circular spread will prevent the growth of weeds. A species of *Coccus* may be found about the roots of Burnet, which was formerly used for dyeing silk and wool a rose colour. In Britain it is superseded by the Mexican Cochineal, but the Moors are said still to make use of it.

It is remarked by Mr. KNAPP, in his delightful book, "The Journal of a Naturalist," that this plant possesses, in a remarkable degree, the faculty of preserving its verdure, and flourishing amid surrounding aridity and exhaustion. "It is probable," continues Mr. KNAPP, "that this plant, and some others, have the power of imbibing that insensible moisture, which arises from the earth even in the driest weather, or from the air which passes over them. The immense evaporation proceeding from the earth, even in the hottest season, supplies the air constantly with moisture; and as every square foot of this element can sustain eleven grains of water, an abundant provision is made for every demand. We can do little more than note these facts: to attempt to reason upon the causes, why particular plants are endowed with peculiar faculties, would be mere idleness; yet, in remarking this, we cannot pass over the conviction, that the continual escape of moisture from one body, and its imbibition by another, this unremitting motion and circulation of matter, are parts of that wonderful ordination, whereby the beneficence and wisdom of Providence are manifested: without the agency of evaporation, not dwelling on the infinitude of effects and results, no vegetation could exist, no animal life continue."

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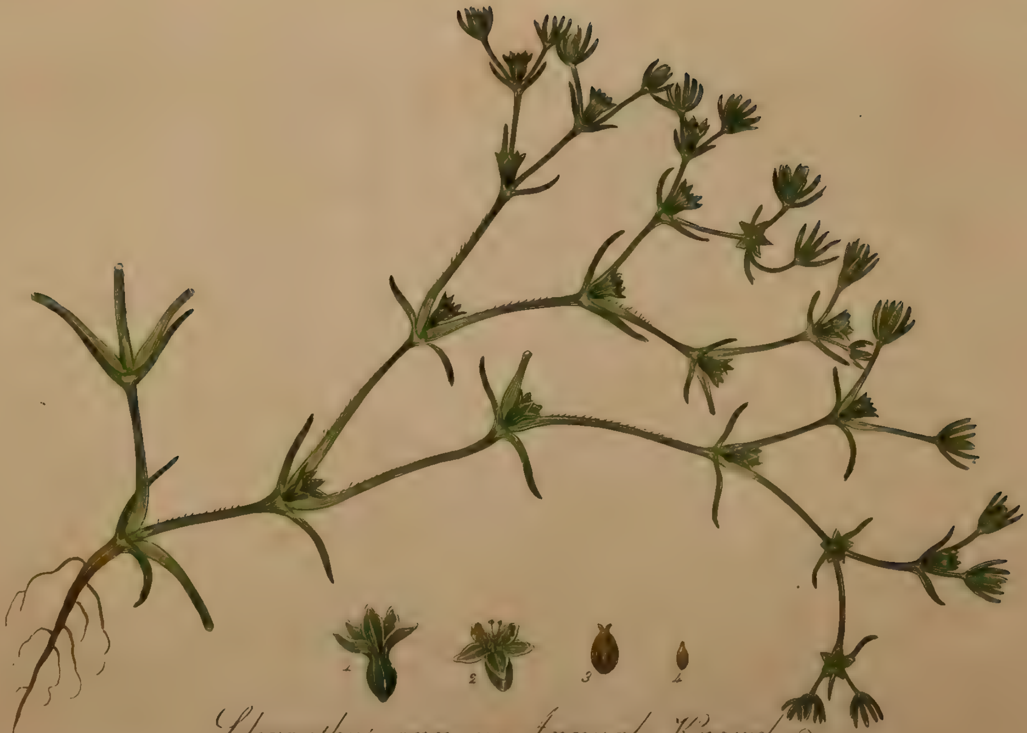

Scleranthus annuus Annual Knawel. ☉

Mathews Del & S.

Pub.^{d} by W.^{m} Baxter Botanic Garden Oxford [illegible].

SCLERA'NTHUS*.

Linnean Class and Order. Deca'ndria†, Digy'nia.

Natural Order. Scleranthеæ, Link. Enum. Pl. p. 417.—Lindl. Syn. p. 217.; Introd. to Nat. Syst. of Bot. p. 166.—Mack. Fl. Hibern. p. 231.—Paronychieæ; tribe, Scleranthеæ, D. C. Prod. v. iii. pp. 365 & 377.—Rich. by Macgilliv. p. 508.—Loud. Hort. Brit. p. 516.—Hook. Brit. Fl. (4th ed.) p. 407.—Portulaceæ, Juss. Gen. Pl. p. 312.—Sm. Gram. of Bot. p. 164.—Querneales; sect. Rumicinæ; type, Scleranthaceæ; Burn. Outl. of Bot. pp. 523, 587, & 594.—Veprеculæ, *Linn.*

Gen. Char. *Calyx* (figs. 1 & 2.) inferior, of 1 sepal, tubular and ribbed at the base, contracted at the summit of the tube; limb in 5 deep segments; permanent and hardened after flowering. *Corolla* none. *Filaments* (see fig. 2.) from 5 to 10, awl-shaped, upright, often unequal, shorter than the segments of the calyx, and proceeding from the top of the tube. *Anthers* roundish, of 2 lobes. *Germen* (see figs. 1 & 3.) superior, roundish. *Styles* (see fig. 3.) 2, spreading, thread-shaped, the length of the stamens. *Stigmas* simple, downy. *Capsule* (see fig. 3.) egg-shaped, very thin, of 1 cell, covered by the calyx. *Seeds* (see fig. 4.) 2, convex on one side, flat on the other; *embryo* curved round the outside of the farinaceous albumen.

The monosepalous, 5-cleft *calyx;* and the 1-seeded *capsule,* covered by the hardened *calyx;* will distinguish this from other genera, without a corolla, in the same class and order.

Two species British.

SCLERA'NTHUS A'NNUUS. Annual Knawel. Parsley Piert. German Knotgrass. Upright Knawel.

Spec. Char. Stems spreading. Root annual. Calyx of the fruit with upright, somewhat spreading, pointed segments.

Engl. Bot. t. 351.—Fl. Dan. t. 504.—Linn. Sp. Pl. p. 580.—Huds. Fl. Angl. (2nd ed.) p. 178.—Willd. Sp. Pl. v. ii. pt. i. p. 660.—Sm. Fl. Brit. v. ii. p. 458.; Engl. Fl. v. ii. p. 282.—With. 5th ed. v. ii. p. 502.; 7th ed. v. ii. p. 536. var. 1.—Gray's Nat. Arr. v. ii. p. 545.—Lindl. Syn. p. 218.—Hook. Brit. Fl. p. 189.—Macr. Man. Brit. Bot. p. 87.—Light. Fl. Scot. v. i. p. 225.—Sibth. Fl. Oxon. p. 138.—Abbot's Fl. Bedf. p. 94.—Thomps. Pl. of Berw. p. 43.—Davies' Welsh Bot. p. 41.—Purt. Midl. Fl. v. i. p. 209.—Relh. Fl. Cant. (3rd ed.) p. 172.—Hook. Fl. Scot. p. 133.—Grev. Fl. Edin. p. 95.—Fl. Devon. pp. 73 & 170.—Johnst. Fl. of Berw. v. i. p. 95.—Winch's Fl. of Northumb. and Durh. p. 28.—Walker's Fl. of Oxf. p. 120.—Bab. Fl. Bath. Suppl. p. 78.; Prim. Fl. Sarn. p. 40.—Dick. Fl Abred. p. 37.—Irv. Lond. Fl. p. 160.—Luxf. Reig. Fl. p. 37 —Cow. Fl. Guide, p. 47.—Baines' Fl. of Yorksh. p. 88.—Leight. Fl. of Shropsh. p. 185.—Mack. Catal. of Pl. of Irel. p. 42.; Fl. Hibern. p. 231.—*Polygonum selinoides, sive Knawel,* Johns. Gerarde, p. 566.—*Knawel,* Ray's Syn. p. 159.

Localities.—In dry sandy fields, and on gravelly banks; frequent.

Fig. 1. Back view of a Flower.—Fig. 2. Front view of ditto.—Fig. 3. Germen, covered by the tube of the Calyx.—Fig. 4. A Seed.—*All magnified.*

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* From *skleros,* Gr. *hard;* and *anthos,* Gr. a *flower;* from the indurated nature of the floral covering.

† See folio 37, note †.

Annual.—Flowers in July and August.

Root small, tapering, fibrous. *Stems* numerous, straggling, slender, from 3 to 6 inches long, decumbent, round, leafy, dichotomously branched, pale green, sometimes reddish, downy chiefly on opposite sides. *Leaves* strap-shaped, pointed, keeled, entire, opposite, and combined at the base by a membranous ciliated margin. *Flowers* small and inconspicuous, of a pale green colour, nearly sessile, partly axillary, partly collected into dense forked tufts. Tube of the *Calyx* (see figs. 1 & 2.) egg-shaped, with 10 ribs, and as many furrows; limb in 5, egg-spear-shaped, pointed segments, white and membranous at the edges, spreading when in flower, upright when in fruit. *Stamens* shorter than the calyx, sometimes 10, but frequently only from 5 to 8, some being often short and imperfect. *Styles* spreading. *Stigmas* downy. *Capsule* inclosed in the permanent, hardened calyx.

This plant is not uncommon on a sandy soil, especially in fallow fields, and in most parts of Europe and Siberia. It was formerly collected in large quantities for dyeing red in the Ukraine, Lithuania, &c., and is still employed by the Turks and Armenians for dyeing wool, silk, and hair, as also for staining the nails of women's fingers. In Europe its use is generally superseded by the true Cochineal, (*Coccus Cacti*,) which has been cultivated in the Intendency of Oaxaca, Mexico, several centuries, and of which, according to Dr. BANCROFT, 375,000*l.* worth are annually consumed in Britain. The Swedes and Germans receive the vapours arising from a decoction of this species into their mouths to cure the tooth-ache.

Goats and sheep eat the plant; cows refuse it.

The Polish scarlet grain or cochineal, (*Coccus Polonicus*,) is found upon the roots of this and the other British species (*Scleranthus perennis*,) in the Summer months. WITHERING.—Some authors consider *S. perennis* as not differing specifically from *S. annuus.*

The *Natural Order* SCLERANTHEÆ consists of apetalous, dicotyledonous, small *herbaceous plants*, with opposite *leaves*, without stipulas. Their *flowers* are hermaphrodite, axillary, and sessile. The *calyx* (see fig. 1.) is 4- or 5-toothed, with a urceolate (pitcher-shaped) tube, into the orifice of which the *stamens*, from 1 to 10, are inserted. The *ovarium* is simple, superior, and 1-seeded; with 2 *styles*, or, sometimes, only 1, their apex emarginate. The *fruit* is a membranous utricle enclosed within the hardened calyx. The *seed* is pendulous from the apex of a funiculus*, which arises from the bottom of the cell; and the *embryo* is cylindrical, and curved round farinaceous albumen.

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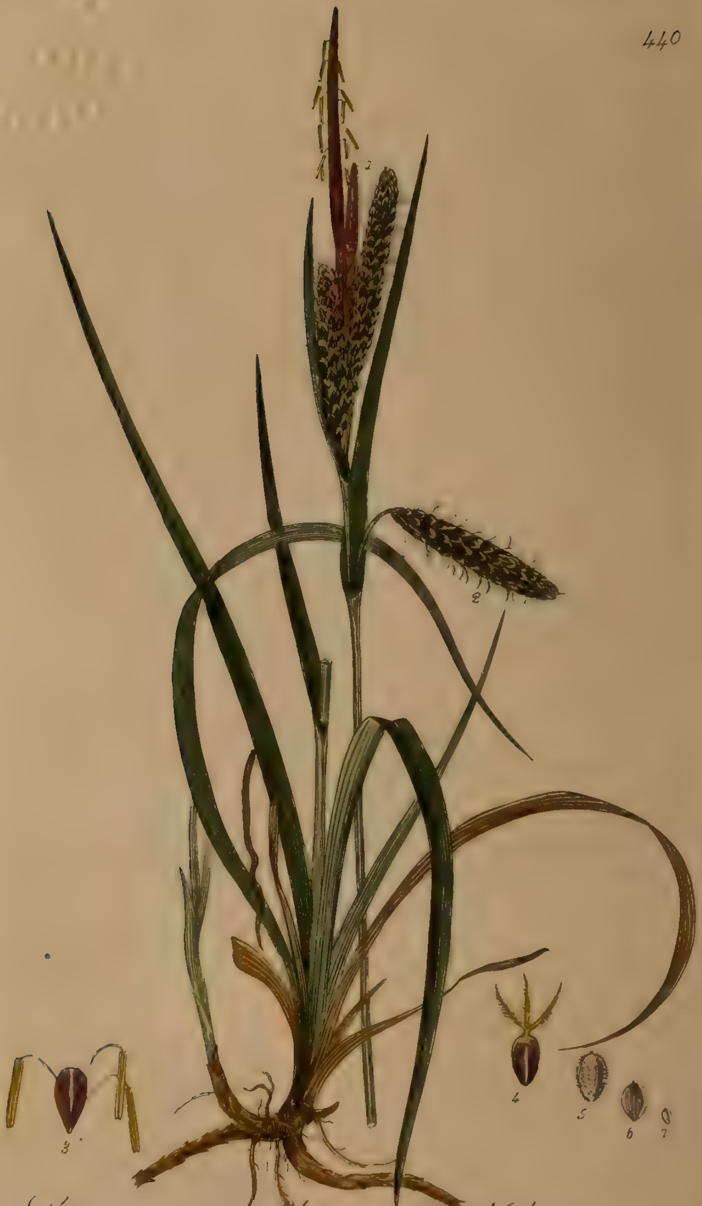
* A little stalk, by which the seed is attached to the placenta.



Carex recurva. Glaucous Heath Carex. ♃

Mathews, Del. & Sc   Pub.d by W. Baxter Botanic Garden Oxford. 18[illegible]

CA′REX[*].

Linnean Class and Order. MONŒ′CIA[†], TRIA′NDRIA[‡].

Natural Order. CYPERA′CEÆ[§], *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—CYPEROIDEÆ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—CYPERALES; sect. CARICINÆ; type, CARICACEÆ; Burn. Outl. of Bot. v. i. pp. 354 & 358.—CALAMARIÆ, *Linn.*

GEN. CHAR. *Sterile Flowers* (see figs. 1 & 3.) numerous, aggregate, in one, or more, oblong, dense catkins (or spikes), their *scales* imbricated every way. *Calyx* a single, spear-shaped, undivided, permanent *scale* to each floret (see fig. 3). *Corolla* none. *Filaments* (see fig. 3.) 3, rarely fewer, hair-like, upright or drooping, longer than the scales. *Anthers* vertical, long, strap-shaped, of 2 cells.—*Fertile Flowers* (see figs. 2 & 4.) numerous, in the same, or more usually in a different *catkin*, very rarely on a separate plant. *Calyx* as in the *sterile flower*. *Corolla (Perigynium)* a single, hollow, compressed, ribbed, often angular, permanent *glume* to each floret; contracted, mostly cloven, and often elongated at the extremity. *Germen* superior, roundish, with 3, rarely but 2, angles, very smooth. *Style* (see fig. 4.) 1, terminal, cylindrical, short. *Stigmas* 3, more rarely 2 only, awl-shaped, long, tapering, downy, deciduous. *Seed* (figs. 6 & 7.) the shape of the germen, with unequal angles, loosely coated with the enlarged, either hardened or membranous permanent corolla (perigynium), both together constituting the *fruit* (see fig. 5).

The *flowers* in imbricated catkins; each with a *calyx* of a single scale; the *sterile flowers* without a corolla; the *fertile flowers* with a corolla of 1 valve, which is pitcher-shaped, and swollen; the single *style* with 2 or 3 stigmas; and the 3-cornered *nut* or *seed*, included within the permanent corolla; will distinguish this from other genera in the same class and order.

Sixty-three species British.

CA′REX RECU′RVA. Recurved Carex. Glaucous Heath Carex. Heath Sedge.

SPEC. CHAR. Sterile and Fertile Florets in separate spikes. Sheaths short, scarcely any. Bracteas leafy, auricled at the base. Fertile Spikes (catkins) cylindrical, scarcely drooping, densely imbricated, on long, slender peduncles. Fruit roundish-egg-shaped, slightly downy, entire at the small point.

Engl. Bot. t. 1506.—Fl. Dan. t. 1051.—Huds. Fl. Angl. (2nd edit.) p. 413.—Gooden. in Tr. Linn. Soc. v. ii. p. 184.—Willd. Sp. Pl. v. iv. pt. I. p. 217.—Sm. Fl. Brit. v. iii. p. 999.; Engl. Fl. v. iv. p. 114.—With. (7th edit.) v. ii. p. 129.—

Fig. 1. Sterile Catkin.—Fig, 2. Fertile Catkin.—Fig. 3. A separate *Sterile Floret.*—Fig. 4. A separate *Fertile Floret.*—Fig. 5. The permanent, hardened *Corolla*, in which the *seed* (fig. 6.) is inclosed.—Fig. 7. *Seed* natural size.—Figs. 3, 4, 5, & 6, *are magnified.*

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[*] From *keiro*, Gr. to *shear* or *cut;* in allusion to the sharp leaves and stems.

[†] See fol. 83, note †.

[‡] See fol. 56, note †.

[§] See fol. 436, *a*.

Lindl. Syn. p. 290.—Hook. Brit. Fl. p. 397.—Macr. Man. Brit. Bot. p. 253.—Sibth. Fl. Oxon. p. 31.—Abbot's Fl. Bedf. p. 206.—Thomps. Pl. of Berw. p. 93.—Davies' Welsh Bot. p. 88.—Purt. Midl. Fl. v. ii. p. 446.—Relh. Fl. Cant. (3rd ed) p. 384.—Hook. Fl. Scot. p. 268.—Grev. Fl. Edin. p. 197.—Fl. Devon. pp. 151 & 118.—Johnst. Fl. of Berw. v. i. p. 202.—Winch's Fl. of Northumb. and Durh. p. 60.—Walker's Fl. of Oxf. p. 273.—Bab. Fl. Bath. p. 55.; Prim. Fl. Sarn. p. 105.—Dick. Fl. Abred. p. 55.—Irv. Lond. Fl. p. 91.—Luxf. Reig. Fl. p. 80.—Cow. Fl. Guide, p. 26.—Baines' Fl. of Yorksh. p. 115.—Leight. Fl. of Shropsh. p. 463.—Mack. Catal. Pl. of Irel. p. 81.; Fl. Hibern. p. 332.—*Carex glauca*, Scop. Fl. Carn. v. ii. p. 223.—*C. flacca*, Schrel. Lips. Append. n. 669, *fide* Smith.—*C. pendula*, Schrel. Lips. p. 62.—*C. limos*, *β*. Leer's Fl. Herb. p. 201. t. 15. f. 3.—*Trasus glaucus*, Gray's Nat. Arr. v. ii. p. 67.—*Cyperoides palustre, spicis purpureo-spadiceis, tenuibus pediculis insidentibus*, Scheuchz. Argros. p. 467.—*Gramen cyperoides, foliis caryophylleis, spicis oblongis, è pediculis longioribus pendulis*, Ray's Syn. p. 418.

Localities.—In moist meadows, pastures, heaths, and woods; common.

Root creeping, sheathed with purplish-brown scales. *Culms (stems)* upright, from eight inches to about a foot high, triangular, sea-green, scarcely rough in any part. *Leaves* chiefly from the root, partially recurved, broadish, pointed, very glaucous, especially on the underside, rough on the keel and the edges, not half so tall as the culms, much resembling the foliage of pinks or carnations. *Bracteas* leafy, the lowermost several inches long; their sheaths very short, or scarcely any, crowned with rounded brown auricles. *Sterile Catkins* generally solitary, sometimes accompanied by a smaller one, and the upper portion of the upper fertile catkins frequently consists of sterile florets. *Fertile Catkins* 2, often 3, cylindrical, blunt, many-flowered, very dense, drooping as they ripen, and at length pendulous, each on a slender, smooth *stalk*, many times longer than its *sheath*. *Scales* egg-shaped, more or less acute; chocolate-coloured, with a greenish rib. *Scales* of the *Sterile Catkins* usually inversely egg-shaped and blunt, dark brown, with a yellow rib; sometimes they are partly acute, and even pointed. *Stamens* 3, (see fig. 3). *Stigmas* 3, on a short style, (see fig. 4). *Perigynium* (*Corolla* of Smith) brownish when ripe, and then termed *fruit*, (see fig. 5), enclosing the seed, elliptical, or somewhat inversely egg-shaped, obtuse, bluntly triangular, tumid, minutely dotted or tuberculated, and with minute short bristly hairs or pubescence. *Seed* (figs. 6 & 7.) short, triangular, dark brown, with pale angles.

Varieties occur in which the sheath of the lower fertile catkin is more elongated, and the peduncle very long; the sterile catkin either solitary, and the fertile catkins entirely fertile; or, with four completely sterile catkins, with half another; though only one, compound at the base, consisting entirely of fertile *florets*. This last variely is *Carex Micheliana* of Smith, in Trans. of Linnean Society, vol. v. p. 270., Fl. Brit. v. iii. p. 1004.; and Engl. Bot. t. 2236. It has smooth fruit. See *Engl. Fl.* and *Leight. Fl. of Shropshire.*

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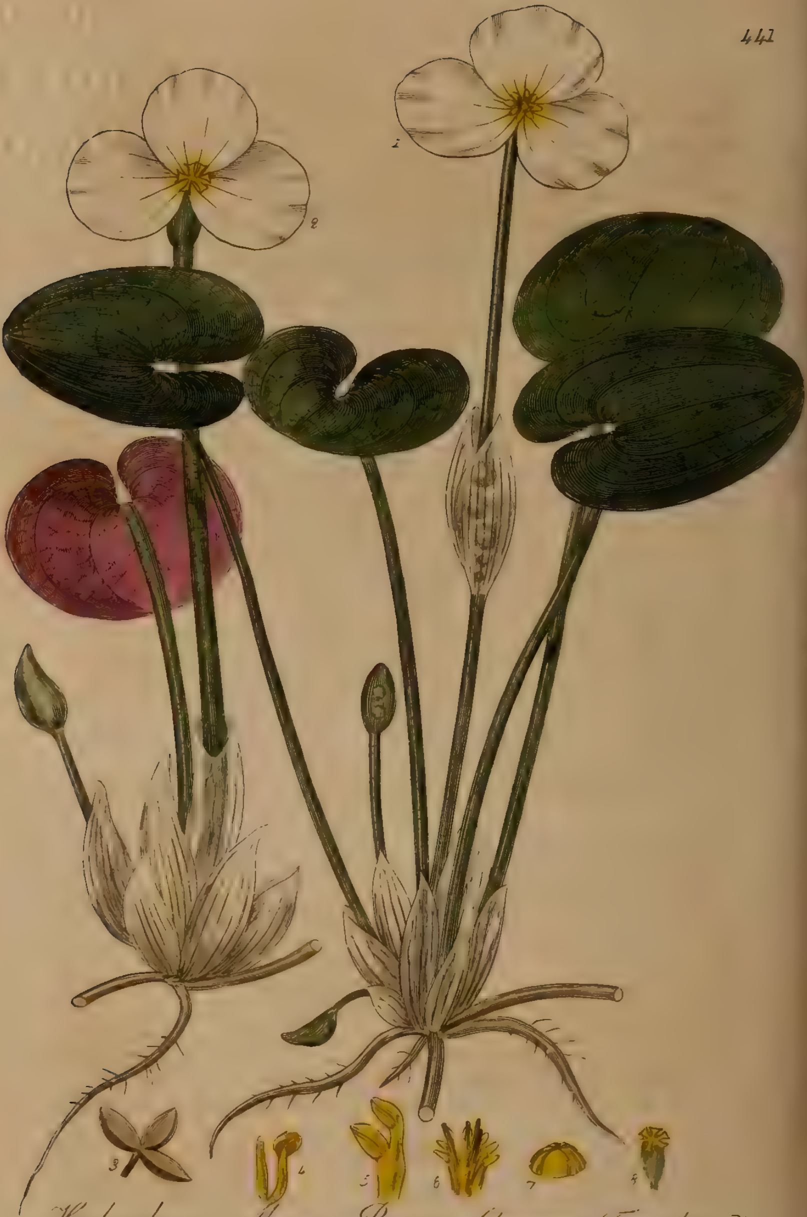

Hydrocharis Morsus Ranæ Common Frog-bit V

Mathews Del. & Sc.

Pub.d by W. Baxter Botanic Garden Oxford 18[illegible]

HYDRO'CHARIS[*].

Linnean Class and Order. Diœ'cia[†], Ennea'ndria[‡].

Natural Order. Hydrochari'deæ, *Dec.* Fl. Fr. v. iii. p. 265.—Lindl. Syn. p. 254.; Introd. to Nat. Syst. of Bot. p. 254.—Rich. by Macgilliv. p. 414.—Loud. Hort. Brit. p. 536.—Mack. Fl. Hibern. p. 272.—Hook. Brit. Fl. (4th ed.) p. 425.—Hydrocharides, Juss. Gen. Pl. p. 67.—Sm. Gram. of Bot. p. 84.—Musales; sect. Hydrocharinæ; type, Hydrocharaceæ; Burn. Outl. of Bot. v. i. pp. 437, 464, & 465.—Palmæ, *Linn.*

Gen. Char. *Flowers* spathaceous. *Sterile Flower* (see fig. 1). *Calyx* (fig. 3.) in 3 deep, equal, oblong, concave segments, membranous at the edges. *Corolla* (see fig. 1.) of 3, roundish, undulated petals, much larger than the calyx, and alternate with its segments. *Filaments* (see fig. 6.) 9, awl-shaped, upright, in three rows; the intermediate row producing, from its base internally, an awl-shaped stalk, or beak (see figs. 4 & 6.), resembling a style, stationed in the centre of the flower; the two other rows connected at the base, and adhering to the beak (see fig. 5). *Anthers* 2-lobed, below the pointed summit of each filament. *Fertile Flower* (see fig. 2). *Calyx* and *Corolla* as in the *sterile flower*. *Germen* (see fig. 8.) inferior, roundish. *Styles* (see fig. 8.) 6, as long as the calyx, compressed, channelled. *Stigmas* cloven, acute. *Capsule* nearly globular, leathery, of 6 cells. *Seeds* numerous, roundish, minute.

The beaked *filaments* of the inner *stamens* of the *sterile flower;* the 6 *styles;* the inferior, 6-celled, many-seeded capsule of the *fertile flower;* and the 3-cleft calyx, and 3-petalled corolla of both flowers; will distinguish this from other genera in the same class and order.

One species British.

HYDRO'CHARIS MO'RSUS RA'NÆ. Common Frog-bit. Lesser Water-lily.

Spec. Char.

Engl. Bot. t. 808.—Curt. Fl. Lond. t. 167.—Fl. Dan. t. 878.—Linn. Sp. Pl. p. 1466.—Huds. Fl. Angl. (2nd ed.) p. 436.—Willd. Sp. Pl. v. iv. pt. II. p. 812.—Sm. Fl. Brit. v. iii. p. 1084.; Engl. Fl. v. iv. p. 250.—With. (7th edit.) v. ii. p. 515.—Lindl. Syn. p. 254.—Hook. Brit. Fl. p. 438.—Macr. Man. Brit. Bot. p. 221.—Lightf. Fl. Scot. v. ii. p. 622.—Sibth. Fl. Oxon. p. 135.—Abb. Fl. Bedf. p. 216.—Relh. Fl. Cant. (3rd edit.) p. 411.—Purt. Midl. Fl. v. iii. p. 78.—Hook. Fl. Scot. p. 290.—Grev. Fl. Edin. p. 211.—Fl. Devon. pp. 161, & 130.—Winch's Fl. of Northumb. and Durh. p. 65.—Walker's Fl. of Oxf. p. 299.—Irv. Lond. Fl. p. 109.—Cow. Fl. Guide, p. 34.—Baines' Yorksh. Fl. p. 99.—Leight. Fl. of Shropsh. p. 496.—Mack. Catal. of Pl. of Irel. p. 86.; Fl. Hibern. p. 273.—*Hydrocharis asarifolia*, Gray's Nat. Arr. v. ii. p. 220.—*Stratiotes foliis Asari, semine rotundo*, Ray's Syn. p. 290.—*Morsus Ranæ*, Johnson's Gerarde, p. 818.

Localities.—In watery ditches, ponds, and slow streams; frequent in England; more rare in Scotland.

Fig. 1. Sterile Flower.—Fig. 2. Fertile Flower.—Fig. 3. Calyx.—Fig. 4. A separate Stamen.—Fig. 5. Ditto.—Fig. 6. Stamens.—Fig. 7. Rudiment of a Germen in the Sterile Flower.—Fig. 8. Germen of Fertile Flower.

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[*] From *udor*, Gr. *water;* and *charo*, Gr. to *rejoice;* from the beauty of its leaves and flowers embellishing the waters.

[†] See folio 143, note †.

[‡] See folio 34, note †.

Perennial.—Flowers in July.

Root of many long, perpendicular, thread-shaped fibres, furnished towards the end with numerous radicles. *Leaves* mostly floating, roundish kidney-shaped, about an inch and a half broad, fleshy, smooth, very entire, somewhat transparent, with a few circular, and many transverse veins; purplish underneath. *Petioles (leaf-stalks)* from 3 to 6 inches long, cylindrical, smooth, thick, transparent, marked with transverse reticulations. *Sterile Flowers* (fig. 1.) 3, on long peduncles arising from a 2-leaved, transparent, membranous *spatha*. *Fertile Flowers* (fig. 2.) on a solitary peduncle, arising from a single spatha. Segments of the *Calyx* equal, between egg-shaped and oblong. *Petals* much larger, roundish, undulate, very delicate, white, with a yellow stain at the base of each. *Stamens* sometimes more than 9, as many as 12. *Seeds* small, egg-shaped, attenuated at the base, with a lax somewhat fleshy covering, formed of warts consisting of spiral cellules.

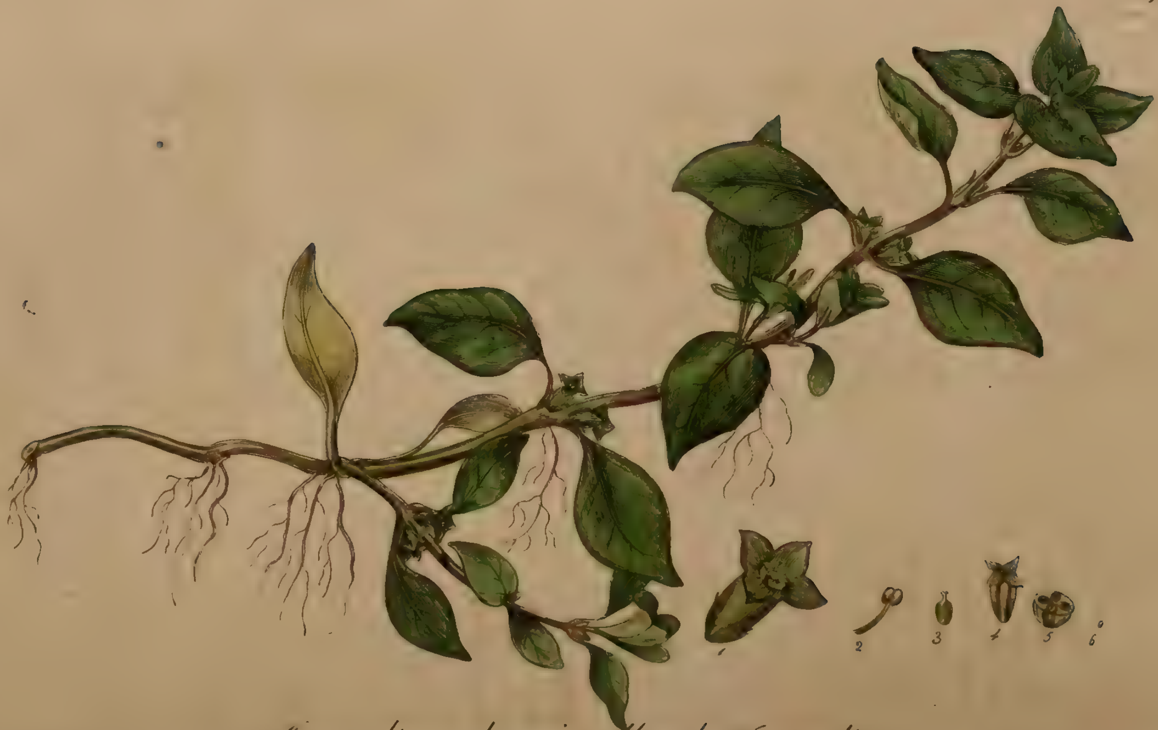
This is a highly ornamental water plant, which will grow freely in ponds and ditches, and is deserving of more frequent introduction into aquaria. It is a native of many parts of Europe in deep ditches, and slow streams, with a muddy bottom, multiplying itself greatly by runners which shoot out to a great length, and put out at the joints long roots which penetrate deep into the mud.

Mr. CURTIS observes, that the whole structure and economy of the *Frog-bit* is exceedingly curious, deserving the minute attention of the inquisitive Botanist.

RAY mentions a double-flowered, very sweet-scented, variety, as growing in his time plentifully in a ditch by the side of Audrey Causeway, in the Isle of Ely, near the great wooden bridge; but Mr. RELHAN sought it there in vain.

The *Natural Order* HYDROCHARIDEÆ, to which the present plant belongs, is composed of monocotyledonous herbaceous floating *plants*, whose *leaves* are mostly radical, with parallel veins, sometimes spiny. Their *flowers* are spathaceous, and either perfect, or separated, with a 3-parted, herbaceous *calyx*, and a *corolla* of 3 petaloid petals. The *stamens* are either definite or indefinite. The *ovary* is single and inferior; with from 3 to 6 *stigmas*. The *fruit* is either dry or succulent, indehiscent, with one or more cells. The *seeds* are destitute of albumen; and have a straight, undivided *embryo*.

The only British genera in this order, are *Stratiotes*, t. 413; and *Hydrocharis*, t. 441.



Mathews Sc.

Isnardia palustris. Marsh Isnardia ⊙

Pub.d by W. Baxter, Botanic Garden, Oxford 1841.

ISNA'RDIA*.

Linnean Class and Order. TETRA'NDRIA†, MONOGY'NIA.

Natural Order. ONAGRA'RIÆ, *Juss.*—Lindl. Syn. p. 107.; Introd. to Nat. Syst. of Bot. p. 56.—Rich. by Macgilliv. p. 522.—Loud. Hort. Brit. p. 513.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 675.—Mack. Fl. Hibern. p. 109.—Hook. Brit. Fl. (4th edit.) p. 405.—SALICARIÆ, Juss. Gen. Pl. p. 333—Sm. Gram. of Bot. p. 170.—ROSALES; subord. MYRTOSÆ; sect. ONAGRINÆ; type, ONAGRACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 617, 722, & 728.—CALYCANTHEMÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) superior, in 4 deep, equal, egg-shaped, broad, spreading, permanent segments. *Corolla* of 4 petals, or wanting. *Filaments* (see figs. 1 & 2.) 4, awl-shaped, shorter than the calyx, and in front of its segments. *Anthers* oblong. *Germen* (fig. 3.) inferior, oblong, 4-cornered. *Style* cylindrical, shorter than the calyx. *Stigma* capitate. *Capsule* (fig. 4.) inversely egg-shaped or nearly cylindrical, 4-cornered, membranous, crowned with the calyx, of 4 cells, and 4 valves, opening at the cells. *Seeds* numerous, oblong, attached to the central column.

The superior, 4-cleft *calyx;* the *corolla* of 4 petals, or wanting; the capitate *stigma;* and the inversely egg-shaped, 4-cornered, 4-valved, 4-celled, many-seeded *capsule*, crowned with the calyx; will distinguish this from other genera in the same class and order.

One species British.

ISNA'RDIA PALU'STRIS. Marsh Isnardia.

SPEC. CHAR. Stems procumbent, rooting, smooth. Leaves opposite, egg-shaped, acute, stalked. Flowers axillary, solitary, sessile, without petals.

Engl. Bot. Suppl. t. 2593.—Linn. Sp. Pl. p. 175.—Willd. Sp. Pl. v. i. pt. I. p. 680.—Ait. Hort. Kew. (2nd ed.) v. i. p. 266.—D. C. Prod. v. iii. p. 61.—Sm. Engl. Fl. v. iv. p. 264.—With. (7th ed.) v. ii. p. 242.—Lindl. Syn. p. 109.—Hook. Brit. Fl. p. 70.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 697.—Macr. Man. Brit. Bot. p. 79.—Irv. Lond. Fl. p. 199.—Bab. Prim. Fl. Sarn. p. 35.—*Dantia palustris*, Pet. Th. Gen. f. 99.—*Alsine palustris, seu paludosa, rotundifolia repens, foliis portulacæ pinguibus binis ex adverso nacentibus, flosculis virescentibus rosaceis*, Lind. Tournef. Alsat. p. 115. t. 2. *b.*—*Glaux major palustris, flore herbaceo*, Bocc. Mus. p. 105. t. 84. f. 2.—Moris. Hort. Blæs. 82, 268.—Ray's Hist. v. ii. p. 1102; v. iii. p. 635,

LOCALITIES.—In ponds and watery places; very rare.—*Hampshire;* Abundant in a bog on Petersfied Heath; recently discovered there by Miss RICKMAN, and J. BARTON, Esq.—*Sussex;* In an old gravel-pit, near Buxstead: 1827; W. BORRER, Esq.—*Island of Jersey;* St. Peter's Marsh: Messrs. HASLAM and W. CHRISTY, 1837.

Fig. 1. A Flower.—Fig. 2. A separate Stamen.—Fig. 3. Germen.—Fig. 4. Capsule.—Fig. 5. Transverse section of Capsule.—Fig. 6. Seed.—Figs. 1 to 5, *more or less magnified.*

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[*] So named by LINNÆUS, in memory of M. ANTOINE DANTE ISNARD, a Botanist and Professor at Paris, and a Member of the Academy of Sciences; he published descriptions of some plants in their Memoirs for 1716, &c.

[†] See folio 46, note †.

Herb floating, smooth, with numerous, long, thread-shaped *roots*. *Stems* several, procumbent, from 6 to 10 inches or more long, simple, or slightly branched, putting out roots from the lower joints, bluntly 4-angled, smooth, leafy. *Leaves* opposite, on short petioles, egg-shaped, somewhat tapering at the base and forming a slight margin to the petiole, quite entire, smooth, rather succulent, bright green, with the mid-rib and margin often red or purplish. *Flowers* in the axils of the leaves, solitary, sessile, small, greenish and inconspicuous, each accompanied at its base by two small, pointed *bracteas*. *Calyx* with 4 triangular segments. *Corolla* wanting.

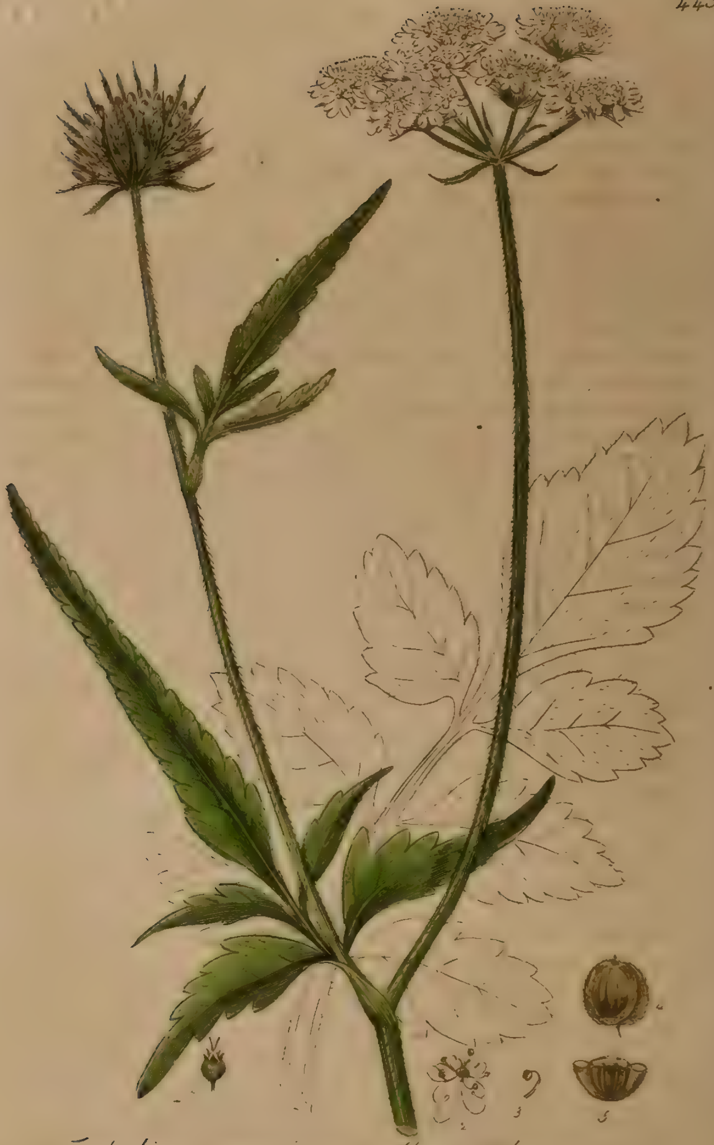
Isnardia palustris has very much the habit of *Peplis portula*, t. 220.; it is a native of Europe, Siberia, and Persia, where it grows in marshes and slow-running water. It was first added to the British Flora by W. BORRER, Esq. who found it growing in a pool at Buxstead, Sussex, in 1827. *Specimens* of this very interesting plant have often been kindly communicated to me by Mr. BORRER; but the specimen from which the drawing for the accompanying plate was made, was sent to me in August last (1841), by my kind friend Mr. EDWARD JENNER, of Lewes, Sussex, a most indefatigable Botanist.

A variety with the leaves more acuminated at both ends, is found in North America.

Sixteen species of *Isnardia* are described in DE CANDOLLE'S *Prodromus Systematis Naturalis Regni Vegetabilis;* and in DON'S *General System of Gardening and Botany;* most of which are separated from the old genus *Ludwegia*.

The *Natural Order* ONAGRARIÆ, is composed of dicotyledonous *herbs* or *shrubs;* with opposite or alternate, simple, entire, or toothed *leaves;* and red, purple, white, blue, or yellow *flowers*, which are either axillary, or disposed in terminal spikes or racemes. The *calyx* is superior, tubular, with a 4- or 5-lobed limb; the lobes cohering in various degrees, with a valvate æstivation. The *petals* are generally equal in number to the lobes of the calyx, into the throat of which they are inserted, mostly regular, with a twisted æstivation, rarely wanting. The *stamens* are sometimes equal in number to the petals, but usually twice that number; with distinct *filaments*, and oblong or egg-shaped *anthers*. The *ovary* is many-celled, usually crowned by a cup-shaped gland; with a thread-shaped *style*, and a capitate or lobed *stigma*. The *fruit* is a *berry* or *capsule*, with from 2 to 4 cells. The *seeds* are numerous, without albumen; and have a straight *embryo;* a long and taper *radicle;* and very short *cotyledons*.

The British Genera of this order, are *Epilobium*, t. 14.; *Œnothera*, t. 257.; *Circæa*, t. 9.; and *Isnardia*, t. 412. The properties of *Onagrariæ* are few, or unknown. *Œnothera biennis*, t. 257, is sometimes cultivated for the sake of its eatable roots, as a sort of salad.



Tordylium maximum Great Hartwort ⊙

Walker sc.   Pub^d by W. Baxter, Botanic Garden, Oxford 1841

TORDY'LIUM [*].

Linnean Class and Order. PENTA'NDRIA [†], DIGY'NIA.

Natural Order. UMBELLI'FERÆ [‡], Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* more or less perfectly separated; those of the circumference fertile. *Calyx* (see fig. 1.) of 5, unequal, deciduous or permanent teeth. *Corolla* (fig. 2.) of 5, inversely heart-shaped petals, with inflexed points; the outer ones radiating and bifid. *Filaments* (see fig. 2.) 5, thread-shaped, spreading, as long as the smaller petals, often wanting in the radiant flowers. *Anthers* roundish. *Germen* (see fig. 1.) inferior, egg-shaped, rugged or bristly, transversely compressed. *Styles* (see fig. 1.) 2, thread-shaped, upright, swelling at the base, subsequently spreading, deciduous; wanting in the central flowers. *Stigmas* simple. *Floral Receptacle* none. *Fruit* flatly compressed from the back, surrounded by an accessory, thick, often crenated margin. *Carpels* with 5 very slender *ridges*, 3 of which are dorsal, and at equal distances, and 2 lateral, and contiguous to the thickened margin, or covered by it. *Interstices (channels)* with from one to three filiform *vittæ*. *Seed* flat.—*Universal* and *partial involucrums* of many leaves.

The dorsally compressed *fruit*, with an accessory, thick, often crenated margin; the *carpels* with very slender ridges, 3 of which are dorsal and equidistant, and 2 lateral and contiguous to the thickened margin; the *channels* with from one to three filiform *vittæ;* and the flattened *seed;* will distinguish this from other genera in the same class and order.

Two species British.

TORDY'LIUM MA'XIMUM. Great Hart-wort.

SPEC. CHAR. Two outer petals of the flowers of the ray each with 2 equal lobes. Involucrum linear, shorter than the umbel. Fruit with the thickened border scarcely notched, and, as well as the disk, rough with appressed hairs. Channels with 1 vitta.

Engl. Bot. t. 1173.—Jacq. Fl. Aust. t. 142.—Dill. in Ray's Syn. p. 206.—Tourn. Int. p. 320.—Linn. Sp. Pl. p. 345.—Willd. Sp. Pl. v. i. pt. II. p. 1382.—Sm. Fl. Brit. v. i. p. 295.; Engl. Fl. v. ii. p. 105.—With. (7th ed.) v. ii. p. 364.—Gray's Nat. Arr. v. ii. p. 521.—Lindl. Syn. p. 115.—Hook. Brit. Fl. p. 117.—De Cand. Prod. v. iv. p. 198.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 346.—Macr. Man. Brit. Bot. p. 103.—Sibth. Fl. Oxon. p. 91. Purt. Midl. Fl. v. iii. p. 27.—Walker's

Fig. 1. Germen, Calyx, and Pistils.—Fig. 2. Corolla.—Fig. 3. A separate Stamen.—Fig. 4. Fruit.—Fig. 5. Transverse section of a Carpel.

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[*] *Tordulion*, Gr. of DIOSCORIDES; said to be from *tornos*, Gr. a *lathe;* and *illo*, Gr. to *turn;* from the nearly circular fruit.

[†] See folio 48, note †.

[‡] See folio 235, *a*.

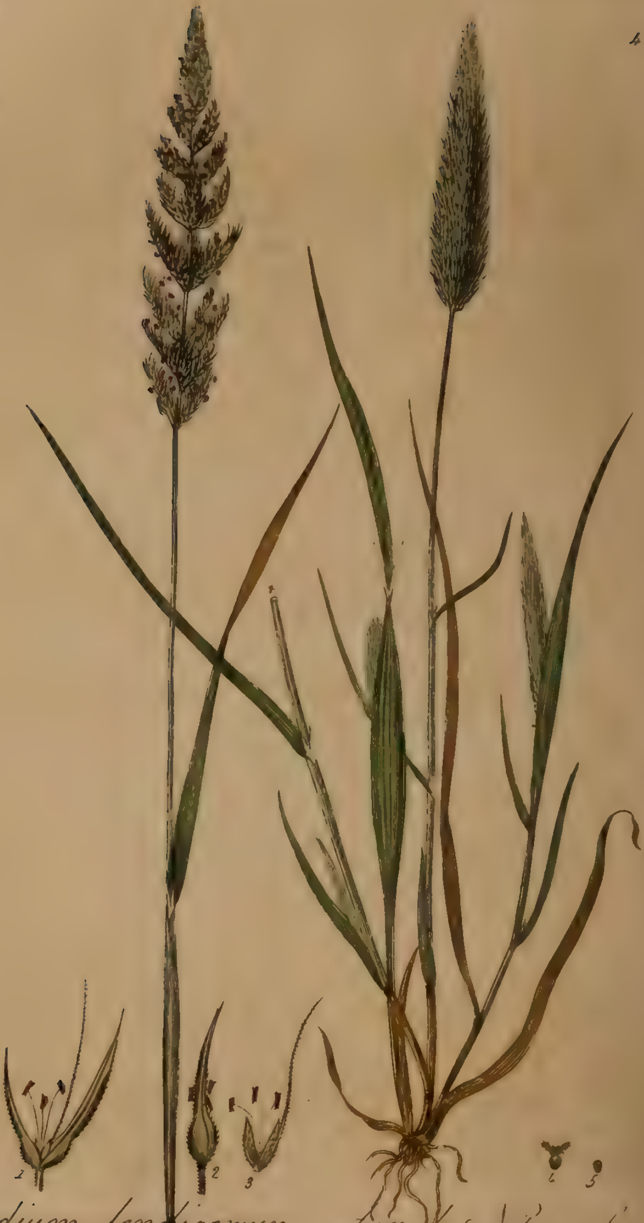
Fl. of Oxf. p. 85.—Irv. Lond. Fl. p. 233.—*Tordylium vulgaris, semine plano, flore ex rubente albo*, Moris. v. iii. p. 316. sect. 9. t. 16. f. 1.—*Tordylium*, Riv. Pentap. Irr. t. 1.—*Heracleum Tordylium*, Spreng. Sp. Umb. 49.—*Seseli creticum majus*, Bauh. Pin. p. 161.—Johnson's Gerarde, p. 1050.—*Caucalis maxima, Sphondylii aculeato semine*, Bauh. Pin. p. 152.—*Caucalis major, semine minus pulchro hirsuto*, Bauh. Hist. v. iii. pt. ii. p. 85, with a figure.

Localities.—On banks and waste ground; very rare.—*Oxfordshire;* Under the hedge on the north side of the Parks: Dr. Sibthorp; 1794. It grew there up to 1819, and also under the trees on the west side of the Parks, but it has since disappeared from both these stations. It grew also on a bank beyond Jericho, about a quarter of a mile N. W. of the Observatory, where it was first pointed out to me by the late Mr. H. Hinton, about 1814, but that locality is now built on: W. B.—*Bucks;* Hedges near Eton-wick, in the greatest abundance: Mr. Gotobed.—*Herts;* In a hedge about half a mile from Eton: Mr. Gotobed; 1803.—*Middlesex;* About London: Morison.

Annual.—Flowers in June and July.

Root tapering, with many slender, almost horizontal, slightly branched fibres. *Stem* from 2 to 4 feet high, upright, branched, leafy, hollow, somewhat flexuose, furrowed, rough with small bristly hairs, which point downwards. *Leaves* unequally pinnate, of a darker green than the stem, clothed with fine, close, bristly hairs, all directed towards the point; leaflets of the lowermost leaves egg-shaped; of the rest spear-shaped, narrow; all coarsely serrated, and sometimes deeply notched, single-ribbed, veiny; the odd one largest. *Petioles* somewhat dilated at the lower part, often hairy. *Umbels* rather small, dense, bristly. *Partial Umbels* about nine. *General Involucrum* of about five slender, strap-shaped, bristly, spreading leaves, shorter than the umbel; *partial involucrum* of 5 awl-shaped leaves, as long as the umbellule, the two inner leaflets smaller. Teeth of the *Calyx* very unequal. *Flowers* white or rose-coloured, more or less radiant, the outermost petal with equal lobes, the two next with very unequal ones. *Fruit* (see fig. 4.) nearly circular; externally bristly; the disk a little convex, marked with 4 brown longitudinal lines; the *border* pale, tumid, wrinkled, and beset with direct bristles; the inside of each *carpel*, with the border, quite smooth, with 2 close, parallel, brown lines, in the middle (see fig. 5). *Channels* with only one vitta in each.

The specimen from which the drawing was made for the accompanying plate, was raised in the Oxford Garden in 1840, from seeds kindly communicated to me by Mr. W. Pamplin, jun. of Soho Square, London.



Gastridium lendigerum. — Awned Nit-grass.

C. Mathews, Del & Sc

Pub^d by W. Baxter, Botanic Garden, Oxford.

GASTRI'DIUM[*].

Linnean Class and Order. TRIA'NDRIA[†], DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.* GRAMINALES; sect. FESTUCINÆ; type, PHALARIDACEÆ; Burn. Outl. of Bot. v. i. pp. 359 & 369.

GEN. CHAR. *Inflorescence* panicled; panicle contracted, spike-like. *Spikelets* (fig. 1.) single-flowered. *Calyx* (fig. 1.) of two nearly equal, concave, keeled, pointed, membranous, awnless glumes, ventricose at the base, much longer than the paleæ. *Corolla* (fig. 3.) of 2 equal, membranous *paleæ;* the lower usually awned under the apex. Sometimes there is a rudiment of a second floret at the back of the upper palea. *Filaments* (see figs. 1 and 3.) 3, hair-like, not longer than the calyx. *Grmen* (fig. 4.) egg-shaped. *Styles* (see fig. 4.) 2, pencel-shaped. *Seed* (fig. 5.) egg-shaped, coated with the hardened corolla.

The contracted, spike-like *panicle;* the single-flowered *spikelets;* the *calyx* of 2 nearly equal, awnless, ventricose glumes, much longer than the corolla; and the *corolla* of 2, equal, membranous paleæ, investing the seed, the lower one mostly with a dorsal awn; will distinguish this from other genera in the same class and order.

One species British.

GASTRI'DIUM LENDI'GERUM. Awned Nit-grass. Panick Millet-grass. Lentil-grass. Yellow-spiked Millet-grass. Yellow Bent.

SPEC. CHAR. Flowers in a dense spiked panicle. Corolla awned. Awn much longer than the calyx.

GASTRIDIUM (Beauvois) LENDIGERUM, Lindl. Syn. p. 302.—Hook. Brit. Fl. p. 31.—Macr. Man. Brit. Bot. p. 263.—Bab. Prim. Fl. Sarn. p. 106.—Irv. Lond. Fl. p. 219.—*Gastridium australe*. Beauvois.—Gray's Nat. Arr. v. ii. p. 151.—*Milium lendigerum*, Engl. Bot. t. 1107.—Fl. Græc. v. i. p. 49. t. 65.—Linn. Sp. Pl. p. 91.—Willd. Sp. Pl. v. i. pt. I. p. 359.—Sm. Fl. Brit. v. i. p. 76.; Engl. Fl. v. i. p. 87.—Schreb. Gram. v. ii. p. 14. t. 23. f. 3.—With. (7th ed.) v. ii. p. 153.—Fl. Devon. pp. 12 & 120.—*Agrostis lendigera*, D. C. Fl. Fr. v. iii. p. 18.—*Agrostis australis*, Linn. Mant. I. p. 30.—*Agrostis rubra*, Huds. Fl. Angl. (1st ed.) p. 26.—*Agrostis ventricosa*, Gouan. Hort. p. 39. t. 1. f. 2.—Knapp's Gram. Brit. t. 25.—*Alopecurus ventricosus*, Huds. Fl. Angl. (2nd ed.) p. 28.—*Panicum serotinum arvense, spicâ pyramidata*. Tourn. Inst. p. 515.—Ray's Syn. p. 394.—*Gramen paniceum serotinum, spicâ laxâ pyramidata*, Moris. v. iii. p. 189—Herb. Bobart.—*Gramen serotinum arvense, paniculâ contracta pyramidali*, Scheu. Agrost. p. 148.—*Gramen alopecuro accedens, ex culmi geniculis spicas cum petiolis longiusculis promens*, Pluk. Almag. p. 177.; Phyt. t. 33. f. 6.

Fig. 1. A Spikelet expanded, showing the Calyx, Corolla, and Stamens.—Fig. 2. The same closed.—Fig. 3. Corolla.—Fig. 4. Germen and Pistils.—Fig. 5. Seed.

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[*] From *gastridion*, Gr. a *ventricle*, or little *swelling*, as is seen at the base of the calyx. HOOKER.

[†] See folio 56, note †.

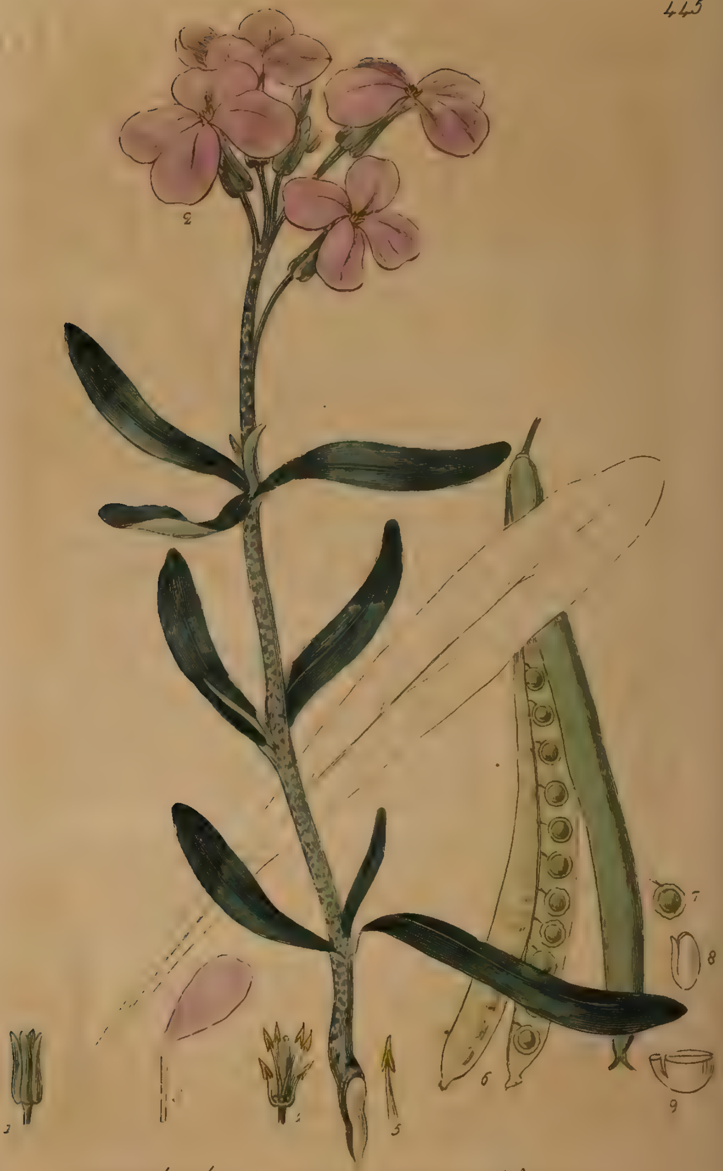
Localities.—In corn-fields, by way-sides, and in places where water has stagnated in the winter; usually near the sea, but not common.—*Devon;* By the Parsonage Style, Lympstone; Babbacome Cliffs: Mr. Jacob. Near Instow: Mr. Curtis.—*Dorset;* Fields by Radipole, near Weymouth: Dr. Pulteney. Near Weymouth Turnpike Gate: Dr. Maton.—*Essex;* Little Braddow: W. Christy. In woods near Great Leighs, about half way between Chelmsford and Baintree: *Mag. Nat. Hist.*—*Gloucestersh.* St. Vincent's Rocks, near the Hot Wells: Mr. Dyer.—*Hampsh.* Near Ryde, Isle of Wight: Mr. J. Woods, jun. In most parts of the Isle of Wight, but chiefly on a clayey soil; it is commonly found amongst corn, clover, in hay-fields, on hedge-banks, and by way-sides, as also in waste places; in some seasons it is so abundant as to be a troublesome weed among the crops: Dr. W. Arnold Bromfield; 1841.—*Kent;* Plentiful in the Isle of Shepey: Hudson. Rochester: N. J. Winch, Esq.—*Norfolk;* Corn-fields at Gillingham: Mr. Woodward. At Cley: Mr. Rose.—In *Somersetshire:* Dr. Gapper, in N. B. G.—*Sussex;* In corn-fields at Hurstperpoint; Clayton; Portslade; Oare; and West Grinstead, on a clayey soil: W. Borrer, Esq. In a corn-field in the way from the High Rocks, Tunbridge Wells, to Eridge Rocks: T. Forster, Esq. In a corn-field (had been wheat) at Westfield, in great abundance; Sept. 16, 1841: Mr. Edward Jenner, of Lewes, Sussex. Groombridge, and other places about Hastings: N. J. Winch, Esq.—*Warwickshire;* In a corn-field near Alcester: Rev. A. Bloxam.—WALES. *Denbighshire;* Pastures east of Merllin Farm House, in the parish of Llanyfydd: Mr. Griffith.—*Flintshire;* About Trellewelin Farm, in the parish of Rhyddlan: Mr. Griffith.

Annual.—Flowers in August.

Root of many short, slender fibres. *Culm (stem)* upright, from 6 inches to a foot or a foot and a half high, branched from the bottom, smooth, leafy. *Leaves* rough at the edges, with roughish, striated, slightly tumid sheaths. *Stipula (ligula)* oblong, torn when old. *Panicle* upright, lobed, but very close, tapering, from an inch and a half to three inches and a half long, and a quarter of an inch to half an inch broad, pale green, glossy; with roughish and angular partial stalks. *Flowers* small, pale green. *Calyx* tumid polished and colourless at the base; its glumes compressed, membranous at the edges, rough at the keel (see figs. 1 & 2); one of them longest, and most pointed, but not awned. *Corolla* (see fig. 3.) much smaller; its outer palea egg-shaped, concave, blunt, downy, with a jointed, rough, twisting, dorsal *awn*, rather longer than the calyx, deciduous; inner palea smaller, cloven, hairy at the base. *Anthers* short. *Seed* coated with the hardened corolla, and enveloped in the shining calyx.

As well as of England it is also a native of Portugal, and the south of France.

I am indebted to the kindness of Dr. W. A. Bromfield, of Ryde, Isle of Wight, for many very fine specimens of this grass, from one of which the drawing for the accompanying plate was made; they were gathered, by Dr. Bromfield, between Quarr Abbey and Fishbourne, near Ryde, in a field abounding also with the rare *Briza minor*. Mr. E. Jenner also has sent me fine specimens of it from a corn-field near Westfield, Sussex.



Matthiola incana. Hoary Stock. ♃

Russell Del. Pub^{d} by W. Baxter Botanic Garden Oxford [illegible] Mathews Sc.

(445.)

MATTHI'OLA*.

Linnean Class and Order. TETRADYNA'MIA†, SILIQUO'SA‡.

Natural Order. CRUCI'FERÆ§, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. PLEURORHIZEÆ‖; tribe, ARABI'DEÆ, Lindl. Syn. pp. 20 & 22; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit, pp. 498 & 499.; Mag. of Nat. Hist. v. i. pp. 143 & 239.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 147.—Mack. Fl. Hib. pt. I. p. 16.—Hook. Brit. Fl. (4th edit.) p. 397.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) of 4, converging, strap-shaped, concave, upright, deciduous sepals; the 2 opposite ones protuberent at the base. *Corolla* (see fig. 2.) cruciform, of 4 inversely egg-shaped, spreading, entire, or broadly notched petals; with upright claws, the length of the calyx (see fig. 3). *Filaments* (fig. 4.) 6, awl-shaped, simple, distinct; the 2 outermost much the shortest, with a nectariferous gland at their base. *Anthers* oblong-arrow-shaped, nearly upright, of 2 strap-shaped lobes. *Germen* (see fig. 4.) oblong, rather compressed, shorter than the stamens. *Style* short and thick, frequently wanting. *Stigma* connivent, thickened or connate at the back. *Pod* (fig. 6.) strap-shaped, compressed, or nearly cylindrical, convex or keeled at one or both sides; valves straight; partition membranous. *Seeds* (fig. 7.) ranged alternately in a single row, orbicular, compressed, generally bordered. *Cotyledons* flat, accumbent (o=), see figs. 8 & 9.

The compressed or nearly cylindrical *pod;* the converging *stigmas,* thickened at the back; the *calyx* with 2 of the sepals prominent at the base; and the compressed *seeds,* disposed in a single row; will distinguish this from other genera, with accumbent cotyledons, in the same class and order.

Two species British.

MATTHI'OLA INCA'NA. Hoary Stock. Hoary Gillyflower.

SPEC. CHAR. Stem shrubby, upright, branched. Leaves spear-shaped, blunt, entire, hoary. Pods somewhat cylindrical, without glands.

Brown in Ait. Hort. Kew. v. iv. p. 119.—De Cand. Syst. v. ii. p. 163.; Prod. v. i. p. 132.—Sm. Engl. Fl. v. iii. p. 205.—Gray's Nat. Arr. v. ii. p. 681.—Lindl. Syn. p. 22.—Hook. Brit. Fl. p. 307.—Don's Gen. Syst. of Gard. and Bot. v. i. p.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A Petal.—Fig. 4. Stamens and Pistil. —Fig. 5. A separate Stamen.—Fig. 6. An Unripe Pod. [In this figure the Artist has erroneously represented the seeds as being all attached to the same margin of the partition, whereas they are attached alternately to both margins.]—Fig. 7. A Fig. 8. Seed.—Seed with the testa removed, showing the accumbent Cotyledons.—Fig. 9. Transverse section of the same.—Figs. 8 & 9, *magnified.*

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* So named in honour of PETER ANDREW MATTHIOLUS, an Italian physician, who died in 1577; he was first physician to Ferdinand of Austria, and author of a Commentary upon the works of DIOSCORIDES. DON.

† See f. 38, n. †. ‡ See f. 62, n. ‡. § See f. 38, *a.* ‖ See f. 141, n. ‖.

151.—Macr. Man. Brit. Bot. p. 14.—Irv. Lond. Fl. p. 164.—*Cheiranthus incanus*, Linn. Sp. Pl. p. 924.—Engl. Bot. t. 1935.—Mill. Illust. t. 55.—Willd. Sp. Pl. v. iii. pt. i. p. 520.—*Leucojum incanum majus*, Moris. v. ii. p. 240. sect. 3. t. 8. f. 1.—*Leucojum purpureum*, Johns. Ger. p. 458.—*Viola matronalis purpurea*, Fuchs. Hist. p. 315.

Localities.—On maritime cliffs in the south of England.—*Hants;* Cliffs between Steephill Cove and Ventnor Cove, Isle of Wight: N. B. G. On the chalk cliffs below Afton Down, east of Freshwater Gate, Isle of Wight, where it grows in great abundance, in places only accessible by a rope from above, truly wild, the cliff being the boundary on the sea side of the most solitary sheep-walks, without a human habitation, or even a spot of cultivation within three quarters of a mile: Dr. W. A. Bromfield.—*Sussex;* On the cliffs to the east of Hastings, 1806: Dawson Turner, Esq. and W. Borrer, Esq —Now lost there: N. B. G., 1835.

Shrub.—Flowers from the end of April to August.

Root somewhat woody; simple at the crown, much branched below. *Stem* from 1 to 2 feet high, upright, bushy, round, leafy, hoary. *Leaves* scattered, from 2 to 6 inches long, covered on both sides with dense, starry, hoary pubescence, single-ribbed, entire, thick and leathery; rounded at the extremity; each tapering at the base into a short petiole *(leaf-stalk). Flowers* corymbose, large and handsome, sweet-scented, of a light purple colour. *Petals* rounded and nearly entire, their claws (see fig. 3.) pale and greenish. *Pods* (fig. 6.) from 2 inches to 3 inches and a half long, crowned with the sessile stigma subtended at each side by a small point. *Valves* strap-shaped, slightly keeled. *Seeds* numerous. almost circular, compressed, light brown, with a white membranous border.

This beautiful plant is a native of most parts of the South of Europe near the sea; it has been cultivated in our gardens for more than 200 years, but it was not known to be a native of England till it was found near Hastings by Messrs. Turner and Borrer, in 1806, as stated above.

The principal varieties in cultivation are the single and double purple; the single and double scarlet; and the single and double white.

I am indebted to Dr. W. Arnold Bromfield, of Ryde, in the Isle of Wight, for several wild specimens of this species gathered by him near Freshwater-Gate, as recorded above. The specimen figured, was kindly communicated to me by J. P. Norman, Esq. of Exeter Coll. Oxford, from the same locality in the Isle of Wight.

For the best methods of cultivating the Garden varieties of this favourite plant, see Loudon's *Encyclopædia of Gardening*, (new edit., 1835.) p. 1050. parag. 5955.; Don's *General System of Gardening & Botany*, v. i. p. 153.; and Martyn's edition of Miller's *Gardener's and Botanist's Dictionary*, under the Article *Cheiranthus*. And for a Historical account of it, see Phillips' *Flora Historica*, 1st ed. v. ii. p. 24.; 2nd ed. v. ii. p. 19.

In the language of flowers, the *Gillyflower*, or *Stock*, is made the emblem of lasting beauty; for, although it is less graceful than the Rose, and not so superb as the Lily, its splendour is more durable, and its fragrance of longer continuance.

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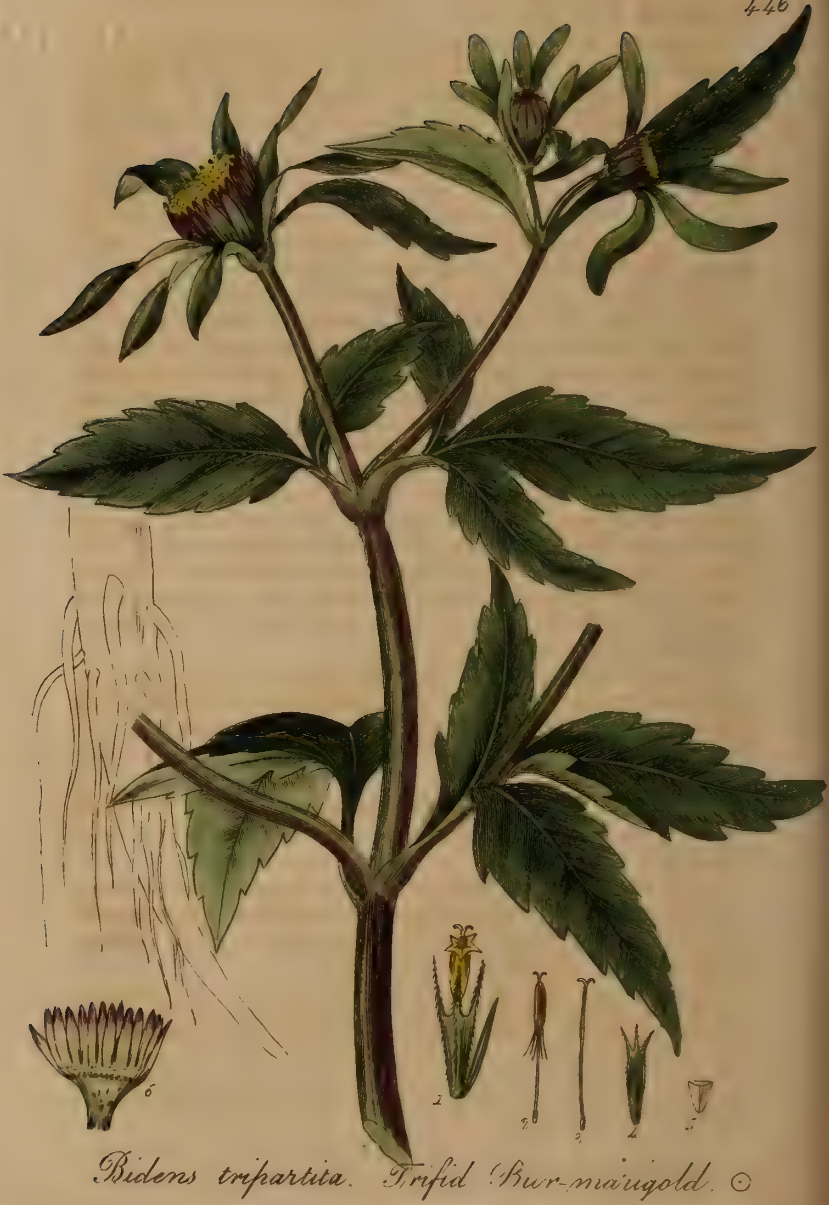

Bidens tripartita. Trifid Bur-marigold. ⊙

Ruſsell Del. Pub.d by W. Baxter Botanic Garden Oxford 1841 Mathews Sc.

BI'DENS[*].

Linnean Class and Order. SYNGENE'SIA[†], POLYGA'MIA, ÆQUALIS[‡]

Natural Order. COMPO'SITÆ[§]; tribe, CORYMBI'FERÆ[||], *Juss.* —Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—Mack. Fl. Hibern. p. 142.—Hook. Brit. Fl. (4th ed.) p. 410.—COMPO'SITÆ; subord. HELIA'NTHEÆ, Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBI'FERÆ, Rich. by Macgilliv. pp. 454 & 455.—CORYMBIFERÆ, sect. 6. Juss. Gen. Pl. pp. 177 & 187.—Sm. Gram. of Bot. pp. 121 & 124; Engl. Fl. v. iii. p. 334.—SYRINGALES; suborder, ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ; Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 926.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common Calyx)* upright, of many oblong, nearly equal, parallel scales, concave, or channelled, at the back; the outer ones often leafy. *Corolla* compound, of several, parallel, level-topped, perfect, tubular, regular and equal florets, (see fig. 1.); their limb egg-shaped, with 5 marginal, spreading segments. *Filaments* 5. hair-like, very short. *Anthers* in a cylindrical tube, slightly prominent. *Germen* (see fig. 1.) oblong compressed, with 2 or more bristly upright points, about equal to the tube of the floret, on its outside. *Style* (see figs. 2 & 3.) thread-shaped, as long as the stamens. *Stigmas* oblong, spreading beyond the anthers. *Seed-vessel* none but the unaltered close calyx. *Seed* (fig. 4.) compressed, angular, abrupt, rough at the edges. *Pappus* (see figs. 1 & 4.) of 2 or more permanent awns, which are rough with minute deflexed bristles. *Receptacle* (see fig. 6.) flat, chaffy. (*Corolla* sometimes radiant).

The *involucrum* of many scales; the outer ones often leafy; the *pappus* of 2 or more permanent awns, which are rough with minute deflexed bristles; and the chaffy *receptacle;* will distinguish this from other genera, with discoid florets, in the same class and order.

Two species British.

BI'DENS TRIPARTI'TA. Three-lobed Bur-marigold. Trifid Water-Hemp-Agrimony. Bastard Agrimony. Water Hemp. Double-Tooth.

SPEC. CHAR, Leaves petiolate, in 3 or 5 spear-shaped, deeply serrated segments. Outer scales of the Involucrum unequal, entire or serrated, many times longer than the flower. Fruit oblong-wedge-shaped. Pappus of 2 or 3 bristles.

Engl. Bot. t. 1113.—Curt. Fl. Lond. t. 237.—Linn. Sp. Pl. p. 1165.—Huds. Fl. Angl. (2nd ed.) p. 355.—Willd. Sp. Pl. v. iii. pt. III. p. 1715.—Sm. Fl. Brit. v. ii. p. 858.; Engl Fl. v. iii. p. 398.—With. (7th ed.) v. iii. p. 813.—Gray's Nat. Arr.

Fig. 1. A separate Floret, with its Germen, and a single Scale of the Receptacle attached to its base.—Fig. 2. Stamen and Pistil.—Fig. 3. Pistil.—Fig. 4. A Seed.—Fig. 5. Section of ditto.—Fig. 6. Receptacle.

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[*] From *bis, double;* and *dens, a tooth;* from the awns or teeth which crown the fruit.

[†] See fol. 91, n. †. [‡] See fol. 117, n. ‡. [§] See fol. 27, *a*.

v. ii. p. 447.—Lindl. Syn. p. 151.—Hook. Brit. Fl. p. 354.—Macr. Man. of Brit. Bot. p. 128.—Lightf. Fl. Scot. v. i. p. 461.—Sibth. Fl. Oxon. p. 248.—Abbot's Fl. Bedf. p. 177.—Davies' Welsh Bot. p. 76.—Purt. Midl. Fl. v. ii. p. 387.—Relh. Fl. Cant. (3rd ed.) p. 333.—Hook. Fl. Scot. p. 238.—Fl. Devon. pp. 135 & 158.—Winch's Fl. of Northumb. and Durh. p. 53.—Walker's Fl. of Oxf. p. 234.—Bab. Fl. Bath. p. 27.; Prim. Fl. Sarn. p. 51.—Irv. Lond. Fl. p. 146.—Luxf. Reig. Fl. p. 70.—Baines' Fl. Yorksh. p. 60.—Leight. Fl. of Shropsh. p. 405.—Guilliv. Catal. Pl. of Banb. p. 17.—Mack. Fl. Hibern. p. 154.—*Verbesina, seu Cannabina aquatica, flore minùs pulchro, elatior et magis frequens*, Ray's Syn. p. 187.—Bauh. Hist. v. ii. p. 1073.—*Eupatorium cannabinum fœmina*, Johns. Ger p. 711.

LOCALITIES.—In watery places, and on the sides of wet ditches, ponds, and canals; frequent.

Annual.—Flowers in August and September.

Root simple, and tapering; with many whitish fibres. *Stem* from 1 to 3 feet high, upright, somewhat angular, solid, smooth, often purplish, leafy, with opposite, axillary branches. *Leaves* opposite, on dilated, winged, connate, ciliated petioles, in 3, sometimes 5, deep, spear-shaped, pointed, strongly serrated segments; dark green above, paler beneath. *Flowers* solitary, terminal, of a brownish yellow, somewhat drooping. *Outer Scales (or bracteas) of the Involucrum* about 8, unequal, spear-shaped, pointed, much longer than the flowers, their margins entire or serrated, and fringed with upright bristles. *Inner Scales of the Involucrum* upright, egg-spear-shaped, blunt, purplish and downy at the apex, their margins membranous, and marked with greenish-brown parallel streaks. *Florets* (see fig. 1.) tubular, dilated upwards, 4- or 5-cleft, segments acute, spreading and recurved. *Fruit* oblong-wedge-shaped, with 4 bristly angles, very much compressed. *Pappus* of 2 or 3 upright, stout bristles, armed with smaller deflexed ones, nearly as long as the floret, and arising from the angles. *Receptacle* (see fig. 6.) nearly flat, covered with strap-spear-shaped, pointed, chaffy scales (see fig. 1.), as long as the florets. A variety sometimes occurs with radiant, 3-toothed, marginal florets; and another in which the leaves are all undivided, but attention to their being petiolate, and to the *outer involucral bracteas* being many times longer than the flowers, will distinguish it from the other British species.

A dye may be prepared from this plant, with alum, to stain cloths yellow. It is very acrid, and when chewed excites salivation. LIGHTFOOT states, that in chemical qualities it much resembles the celebrated *Verbesina Acmella*, Linn Sp. Pl. p. 1271, *(Spilanthes Acmella*, Willd. Sp. Pl. v. iii. pt. III. p. 1713*)*, and therefore infers the probability of its proving serviceable in calculous complaints.—The seeds have been known sometimes to destroy the *Cyprinus auratus*, or *Goldfish*, by adhering to their gills or jaws. Some very interesting remarks, by Dr. R. BROWN, relative to the British species of *Bidens*, may be seen in Dr. JOHNSON'S admirable "Flora of Berwick-upon-Tweed," v. ii. p. 287.; but they are too long to copy here.

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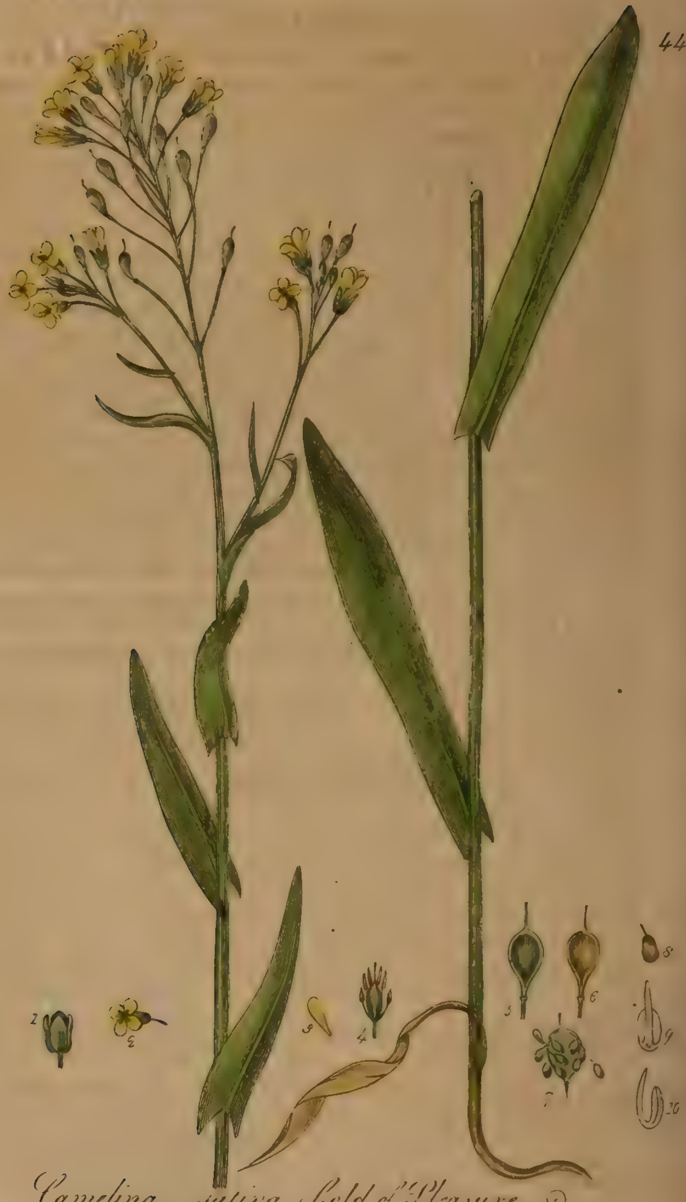
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Camelina sativa. Gold of Pleasure ⊙

Russell Del. Pubd by W Baxter Botanic Garden Oxford [illegible] Mathews S:

CAMELI'NA[*].

Linnean Class and Order. TETRADYNA'MIA[†], SILICULO'SA[‡].
Natural Order. CRUCI'FERÆ[§], Juss. Gen. Pl. p. 237.—Sm. Gram of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; suborder, NOTORHIZEÆ; tribe, CAMELINEÆ; Lindl. Syn. pp. 20, 21, & 30.; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort. Brit. pp. 498 & 499.; Mag. Nat. Hist. v. i. pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 149.—Mack. Fl. Hibern. pp. 16 & 25.—Hook. Brit. Fl. (4th edit.) pp. 397 & 398.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, SISYMBRIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, and 858.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, equal at the base, of 4 elliptic-oblong, uniform, moderately spreading sepals. *Corolla* (fig. 2.) cruciform, of 4 inversely egg-shaped, undivided petals, their claws rather shorter than the spreading border. *Filaments* (see fig. 4.) 6, thread-shaped, simple. *Anthers* oblong-heart-shaped. *Germen* (see fig. 4.) roundish. *Style* cylindrical, upright. *Stigma* simple, blunt. *Pouch* (see figs. 5 & 6.) inversely egg-shaped, rarely globular, of 2 cells; valves inflated, dehiscing along with part of the style. *Seeds* (see figs. 7 & 8.) numerous in each cell, oblong, compressed, not bordered. *Cotyledons* incumbent. (o||). *Flowers* yellow.

The inversely egg-shaped, many-seeded *pouch*, with inflated *valves;* and the simple *filaments;* will distinguish this from other genera, with incumbent *cotyledons*, in the same class and order.

One species British.

CAMELI'NA SATI'VA. Cultivated Camelina. Common Gold of Pleasure. Sesamum.

SPEC. CHAR. Pouch inversely egg-shaped, bordered, twice as long as the style. Stigma simple. Leaves spear-arrow-shaped.

CAMELINA SATIVA Crantz, Aust. fasc. 1. p. 17.—Br. in Ait. Hort. Kew. (2nd edit.) v. iv. p. 93.—De Cand. Syst. v. ii. p. 515.; Prod. v. i. p. 201.—Hook. Fl. Lond. t. 70.—Sm. Engl. Fl. v. iii. p. 164.—With. (7th ed.) v. iii. p. 750.—Gray's Nat. Arr. v. ii. p. 698.—Lindl. Syn. p. 30.—Hook. Brit. Fl. p. 300.—Macr. Man. Brit. Bot. p. 20.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 214.—Hook. Fl. Scot. p. 198.—Grev. Fl. Edin. p. 142.—Winch's Fl. of Northumb. and Durham, p. 42.—Walker's Fl. of Oxf. p. 183.—Irv. Lond. Fl. p. 263.—Baines' Fl. of Yorksh. p. 9.—Leight. Fl. of Shropsh. p. 310.—Mack. Catal Pl. of Irel. p. 60.; Fl. Hibern. p. 25.—*Myagrum*, Ray's Syn. p. 302.—Johnson's Gerarde, p. 273.—*Myagrum sativum*, Linn. Sp. Pl. p. 894.—Willd. Sp. Pl. v. iii. pt. I. p. 408.—Fl. Dan. t. 1038.—Cavan. Ic. v. i. p. 47. t. 66.—Ehrh. Pl. Off. p. 407.—Huds. Fl. Angl. (2nd edit.) p. 277.—With. (2nd ed.) v. ii. p. 665.—Lightf. Fl. Scot. v. i. p. 336.—*Pseudo-myagrum*, Matth. Valgr. v. ii. p. 515.—Dalech. Hist. p. 1137, with a figure.—*Sesama*, Trag. Hist. p 655, with a figure.—*Moenchia sativa*, Roth. Germ. v. i. p. 274.—With. 4th ed.—*Alyssum sativum*, Engl. Bot. t. 1254.—Sm. Fl. Brit. v. ii. p. 679.—With. (5th ed.) v. iii. p. 693.—Relh. Fl. Cant. (3rd ed.) p. 260.—*Gold of Pleasure*, Petiv. H. Brit. t. 48. f. 11.

Fig 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A Petal.—Fig. 4. Stamens and Pistil.—Figs. 5 & 6. Fruit.—Fig. 7. The same with the valves removed, showing the partition, with the seeds attached.—Fig. 8. A Seed.—Figs. 9 & 10.—The incumbent Cotyledons.

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[*] From *chamoi*, Gr. *dwarf* or *humble;* and *linum*, *flax*.

[†] See folio 38, note †.

[‡] See folio 107, note ‡.

[§] See folio 38, *a*.

Localities.—In cultivated fields; occasionally among Flax, plentifully, but apparently imported with it from abroad, as it does not long propagate itself with us spontaneously.—*Oxfordsh.* In cornfields, occasionally; near Headington: Rev. R. Walker. Among Flax, in the experimental department of the Botanic Garden; 1841: W. B.—*Cambridgsh.* Crab Marsh, Wisbeach; and Chippenham Gravel-pit: Rev. R. Relhan.—*Derbysh*, Normanton: Mr. Coke. Heanor: Howitt, in N. B. G.—*Dorset;* Flax-fields about Bridport, and Lyme: Hudson.—*Durham;* On the Ballast Hills of Tyne and Wear: N. J. Winch, Esq.—*Essex;* By the Horse and Groom near Lea Bridge, but scarcely wild: Mr. E. Foster, jun.—*Leicestersh.* Thrinkstone, among newly sown grass, in 1833, but not appearing since: Ch. Babington, in N. B. G.—*Middlesex;* Road-side at Stoke Newington; at Highgate; and in the Isle of Dogs: Mr. J. Woods, jun. Hampstead Heath: Hunter.—*Norfolk;* Out of St. Giles's Gates, Norwich, by the road-side: Smith. Creek, and Burnham Norton: Miss Bell, in N. B. G.—*Northamptonsh.* In a Flax-ground at Dingley: Martyn.—*Northumberland;* In fields between Newcastle and Jesmond on newly broken-up ground; and on the Ballast Hills of Tyne and Wear: N. J. Winch, Esq.—*Notts;* Banks of the Trent opposite Colwick: N. B. G.—*Shropsh.* Cornfields at Hord's Park, Bridgenorth: Rev. A. Bloxam. Among Flax, common: *Fl. Shropsh.*—*Somersetsh.* Timber-yard at Bridgewater: N. B. G.—*Suffolk;* In Lakenham Field, by Wangford: Mr. Eagle.—*Surrey;* Wimbledon Common: Martyn. Wandsworth, and Merton: Mr W. Pamplin, jun.—*Yorksh.* On the foot-road from Thrisk to Thirlby; cornfields at Clapgate, near Richmond; near Rotherham; Pontefract; and Beverley; and on the Wolds. Never of long continuance in one station: Mr. Baines. Heslington Fields near York: Sir T. Frankland.—WALES. *Montgomerysh.* Cornfield near Welchpool: N. B. G.—SCOTLAND. Found occasionally in the counties of *Argyle, Ayr, Edinburgh, Fife, Forfar, Lanark, Orkney,* and *Ross.*—IRELAND. In fields, occasionally among Flax, with which it has been imported: *Fl. Hibern.*

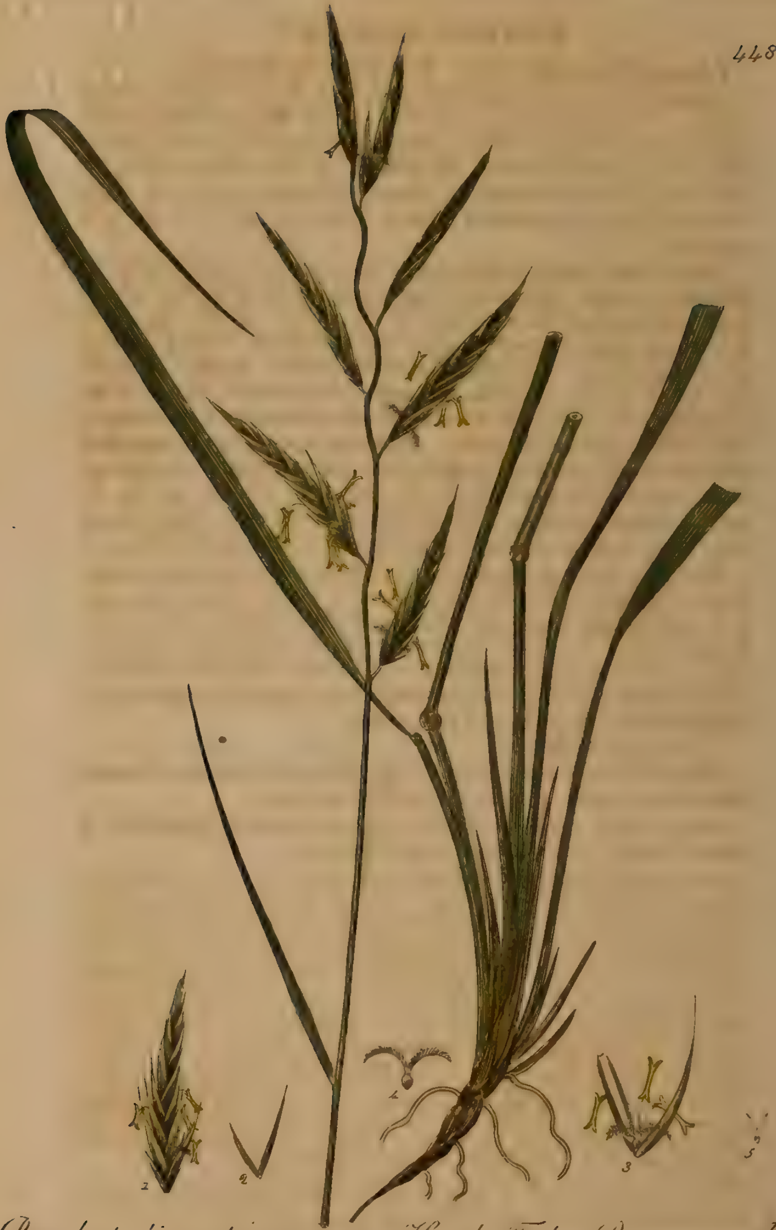
Annual.—Flowers in June and July.

Root small, tapering, fibrous. *Stem* from 18 inches to 2 or 3 feet high, simple, panicled above, smooth, or more or less downy. *Leaves* alternate, spear-shaped, pointed, bright green, 2 or 3 inches long, entire, or slightly toothed, sometimes more or less hairy; clasping the stem with their arrow-shaped base. *Flowers* small, pale yellow, in loose corymbose clusters. *Petals* blunt, entire (see fig. 4). *Pouches* (see figs. 5 & 6.) on long fruit-stalks, spear-shaped, bordered, 4-ribbed, smooth, inflated, and veiny; terminated by the long *style*. *Seeds* (see fig. 7.) 6 or 8 in each cell, slightly angular, inversely egg-shaped, entire at the end.

This plant is a native of Germany and the southern counties of Europe, in cornfields, and especially among Flax, with the seed of which it has been introduced into the more northern parts, as Sweden, Denmark, and Britain. It is cultivated in Germany for the sake of the expressed oil of the seeds, which the inhabitants use for medicinal, culinary, and economical purposes.

The seeds are said to be a favourite food with geese; horses, cows, goats, and sheep, eat the plant.

Professor Burnett observes, that the pompous provincial name, *Gold-of-Pleasure*, is thought to have a satirical reference to the disappointment gold spent in pleasure falsely so called entails.



Brachypodium pinnatum Heath False Brome-graſs ♃

Mathews, Del. & Sc.   Pub^d by W Baxter Botanic Garden Oxford 1841

BRACHYPO'DIUM *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. vi. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgi liv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th edit.) p. 426.—GRAMINA, *Linn.*—GRAMINALES; sect. FESTUCINÆ; type, AVENACEÆ; Burn. Outl. of Bot. v. i. pp. 359 and 369.

GEN. CHAR. *Inflorescence* somewhat racemose. *Spikelets* (fig. 1.) alternate, remote, cylindrical-compressed, many-flowered, with a short pedicel, their sides directed to the rachis. *Calyx* (fig. 2.) of 2, unequal, spear-shaped, sharp-pointed, concave, keeled *glumes*, containing many, alternate, 2-ranked, perfect florets. *Corolla* (fig. 3.) of 2 unequal *paleæ*, the *outer* one generally awned at the extremity; the *inner* one retuse. *Scales (nectary)* spear-shaped, hairy above, occasionally bifid. *Filaments* (see fig. 3.) 3, hair-like, shorter than the corolla. *Anthers* strap-shaped, pendulous, notched at each end. *Germen* (see fig. 4.) turbinate. *Styles* (see fig. 4.) short. *Stigmas* feathery. *Ovary* villous at the end. *Seed* oblong, quite loose, though closely enveloped in the unchanged corolla.

The spike-like *inflorescence;* the cylindrical-compressed, many-flowered *spikelets*, with their sides directed to the rachis; the *calyx* of 2, spear-shaped, unequal *glumes;* and the *corolla* of 2 spear-shaped *paleæ*, the *outer* one awned at the extremity, the *inner* retuse; will distinguish this from other genera in the same class and order. It differs from *Festuca* (t. 324), in the *spike-like inflorescence*, and the retuse inner palea of the corolla.

Two species British.

BRACHYPO'DIUM PINNATUM. Winged Shortfoot. Pinnated False Brome grass. Spiked Heath Fescue-grass.

SPEC. CHAR. Spike upright. Spikelets nearly cylindrical, 2-ranked, hairy. Awns shorter than the florets.

BRACHYPODIUM PINNATUM, Beauvois.—Gray's Nat. Arr. v. ii. p. 112.—Lindl. Syn. p. 297.—Hook. Brit. Fl. p. 55.—Bab. Fl. Bath. p. 60.; Suppl. p. 101.—Mack. Fl. Hibern. p. 316.—*Bromus pinnatus*, Linn. Sp. Pl. p. 115.—Huds. Fl. Angl. (1st ed.) p. 41.—Willd. Sp. Pl. v. i. pt. I. p. 438.—Sm. in Tran. of Linn. Soc. v. iv. p. 301.—Sm. Fl. Brit. v. i. p. 137.—Engl. Bot. t. 730.—With. (7th edit.) v. ii. p. 191.—Weig. Obs. p. 14. t. 1. f. 10.—Host. Gram. Austr. v. i. p. 18. t. 22.—Leers' Fl. Herb. p. 39. t. 10. f. 3.—Relh. Fl. Cant. (3rd ed.) p. 45.—Grev. Fl. Edin. p. 27.—Fl. Devon. pp. 20 & 125.—Perry's Pl. Varvic. Select. p. 10.—*Festuca pinnata*, Huds. Fl. Angl. (2nd ed.) p. 48. excl. var. β.—Knapp's Gram. Brit. t. 75.—Schrad. Germ. v. i. p. 342.—Sm. Engl. Fl. v. i. p. 150.—With. (5th edit.) v. ii. p. 209.—Sibth. Fl. Oxon. p. 46.—Abb. Fl. Bedf. p. 22.—Purt. Midl. Fl. v. i. p. 83.—Sincl. Hort. Gram. Wob. p. 375.—Rev. G. E. Smith's Pl. of S. Kent. p. 7.—Walker's Fl. of Oxf. p. 27.—Irv. Lond. Fl. p. 99.—Baines' Fl. of Shropsh. p. 121.—*Triticum pinnatum.* Macr. Man. Br. Bot. p. 275.—*Avena læta*, Salisb. Pro. p. 22.—*Gramen spicâ brizæ majus*, Bauh. Prod. p. 18.; Theatr. p. 133.—Ray's Syn. p. 392.—*Gramen loliaceum corniculatum*, Scheuchz. Agrost. p. 35.

Fig. 1. A Spikelet.—Fig. 2. Calyx.—Fig. 3. Corolla, shewing the 2 Paleæ, and the Stamens, & Pistils.—Fig. 4. Germen, Styles, & Stigmas.—Fig. 5. The Nectary.

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* From *Brachus*, Gr. *short;* and *pous*, Gr. a *foot;* from the sessile, or nearly sessile spikelets.

† See fol. 56, note †.

LOCALITIES.—In open fields, and heathy places, on a chalky soil.—*Oxfordsh.* Common enough about Oxford: D. BOBART. Woodstock Park: Mr. J. SHERARD. Burford Downs: Rev. Dr. GOODENOUGH. Shadwell Copse, between Cumnor Hurst and Childswell Farm. On the Leys about a mile E. from Upper Heyford. Between Upper Heyford and Northbrook. Side of the road between Witney and Burford; and between Stonesfield and Woodstock Park: W. B.—*Beds.* Clapham, between Woods: ABBOT. Houghton Conquest Park: B.G.—*Cambridgesh.* Hedges and dry fields, remaining green in the driest places where other plants are all withered: RELHAN.—In *Derbysh.*: N. B. G.—*Devon;* Chudleigh; Ingsdon near Ilsington; Bovey Tracey; and Ashburton: *Fl. Dev.* —*Dorset;* Common on the chalky Downs; cornfields near the turnpike-gate, Weymouth; near Broadway and Blandford: B. G.—*Gloucestersh.* St. Vincent's Rocks; and Broadway Hill: B. G.—*Kent;* Chalk-hills; Shakspeare's Cliff; and Dover Cliffs: N. B. G. Between Radigund's Abbey and Dover; and on Narbourne Downs; B. G. On Shorne Cliff: Rev. G. E. SMITH.—*Leicestersh.* On the Wolds among Furze; most common on the eastern side of the county: Dr. PULTENEY.—*Norfolk;* Earsham, and elsewhere abont Bungay: B. G.—*Notts;* Rather frequent on the magnesian limestone: N. B. G.—*Somersetsh.* At Charlcombe; and on the Canal-bank near Bathampton: *Fl. Bath.*—*Suffolk;* About Bungay: B. G.—*Surrey;* Between Dorking and Ranmore Common: N. B. G. Shirley Common, near Croydon: Mr. W. PAMPLIN, jun.—*Sussex;* Many places on the Downs: N. B. G.—*Warwicksh.* Grafton, and Great Alne: T. PURTON, Esq.—*Worcestersh.* Abundantly in almost every pasture of a clayey soil in the neighbourhood of Great Comberton and Pershore: NASH. Badsey: T. Purton, Esq.—*Yorksh.* Near Bramham, and Market Weighton: Cave Hole Wood; Giggleswick Scar; under a wall near Stackhouse; near Nunnington, and other places about Castle Howard; Byland Wood, near Coxwold; road-side between Ferrybridge and Doncaster; Walkingham Warren, near Farnham; about Wetherby, plentifully: N. B. G. Thorp Arch; and Roche Abbey: Mr. BAINES.—SCOTLAND. *Fifeshire;* Near North Queensferry: Mr. NEILL.—IRELAND. In hedges near Kinsale: Mr. J. DRUMMOND.

Perennial.—Flowers in July.

Root fibrous, somewhat creeping. *Culms (stems)* from 18 inches to 2 feet high or more, upright, roundish, striated, smooth, leafy, simple. *Leaves* somewhat upright, strap-spear-shaped, taper-pointed, rather rigid, striated, roughish, and mostly destitute of hairs. *Sheaths* upright, upper ones smooth, lower hairy. *Stipulæ* short, blunt, and ciliated. *Spike* upright, 2-ranked. *Spikelets* from 6 to 10, alternate, strap-shaped, upright, sessile; composed of from 6 to 12, closely imbricated florets. *Glumes* (fig. 2.) unequal, spear-shaped, nerved, slightly awned. *Outer Palea* (see fig. 3.) with 5 or 7 ribs, somewhat hairy at the margin, with a terminal awn, shorter than itself, sometimes scarcely any. *Inner Palea* retuse, its margins incurved, with a fringed rib on each side.

Mr. SINCLAIR observes, that this Grass cannot as yet be considered in any other light than as a noxious weed; for though the weight of produce is considerable, it is neither early, nutritive, or relished by cattle.

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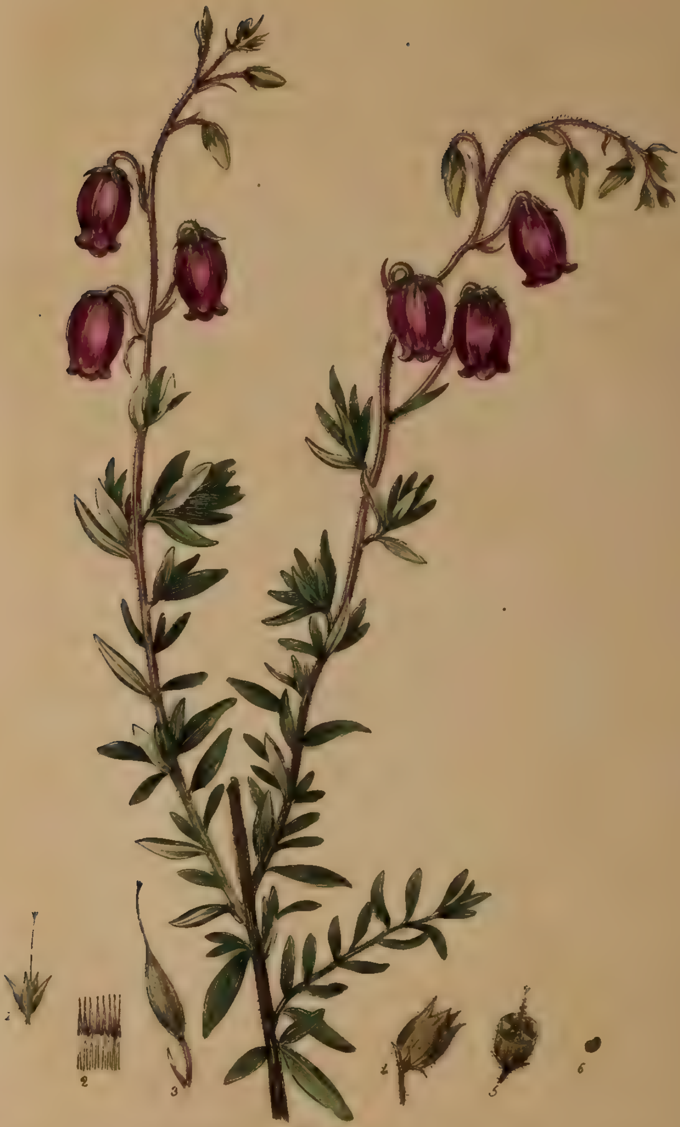

Menziesia polifolia. Polion leaved Menziesia ♄

Ruſsell Del. Pub.d by W. Baxter, Botanic Garden, Oxford 1811 Mathews Sc.

MENZIE'SIA *.

Linnean Class and Order. OCTA'NDRIA †, MONOGY'NIA.

Natural Order. ERI'CEÆ, *Brown's* Prod. p. 557.— Lindl. Syn p. 172; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 179.—Hook. Brit. Fl. (4th ed.) p. 411.—ERICA'CEÆ; subtribe, ERI'CEÆ NORMA'LES, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 & 786.—Loud. Arb. et Frutic. Brit. pp. 1076 & 1079.—ERICINEÆ, Rich. by Macgilliv. p. 450.—RHODODENDRA, Juss. Gen. Pl. p. 158.—Sm. Gr. of Bot. p. 114.—SYRINGALES; subord. ERICOSÆ; sect. ERICINÆ; type, ERICACEÆ; subtype, ERICIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—BICORNES, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, divided nearly to the base into 4 or 5 segments, permanent. *Corolla* of 1 petal, inflated, nearly egg-shaped, deciduous; limb in 4 or 5 small, spreading, equal segments. *Filaments* (fig. 2.) 8 or 10, thread-shaped, equal, shorter than the corolla, inserted into the receptacle. *Anthers* oblong, without horns or crest; cloven at the base; opening by 2 pores at the summit. *Germen* superior, roundish, furrowed. *Style* (see figs. 1 & 3.) upright, angular, rather longer than the stamens, *Stigma* blunt, with 4 or 5 small notches. *Capsule* (see figs. 4 & 5.) elliptic-oblong, with 4 or 5 furrows, and as many valves and cells; the partitions (dissepiments) formed by the inflexed margins of the valves, and opening between them. *Seeds* (fig. 6.) numerous, small, oblong, acute, affixed to the ribs of the central column.

The inferior, deeply 4- or 5-parted *calyx;* the ventricose *corolla,* with a spreading 4- or 5-toothed limb; and the 4- or 5-celled, many-seeded *capsule,* with 4 or 5 valves dehising through the dissepiments; will distinguish this from other genera in the same class and order.

Two species British.

MENZIE'SIA POLIFO'LIA. Polium-leaved Menziesia. Irish Menziesia. Irish Heath. Irish Whorts. St. Dabeoc's Heath. Heath Gardrobe.

SPEC. CHAR. Leaves egg-shaped, the margins revolute; downy and white beneath. Flowers 4-cleft, with 8 stamens, in terminal leafy racemes.

Juss. in Ann. du Mus. v. i. p. 55.—Ait. Hort. Kew. (2nd ed.) v. ii. p. 360.—Sm. Eng. Fl. v. ii. p. 223.—With. (7th ed.) v. ii. p. 480.—Gray's Nat. Arr. v. ii. p. 397.—Lindl. Syn. p. 173.—Hook. Br. Fl. p. 175.—Irv. Lond. Fl. p. 242.—Mack. Fl. Hibern. p. 180.—*Menziesia Dabeoci,* Sm. Comp. (3rd ed) p. 61.—Mack. Cat. Pl. of Irel. p. 37.—*Erica Dabeocii,* Linn. Sp. Pl. p. 509.—Huds. Fl. Angl. (2nd ed.) p. 166.—Engl. Bot. t. 35.—Sm. Fl. Brit. v. i. p. 420.—*Erica Daboecia,*

Fig. 1. Calyx.—Fig. 2. Stamens.—Fig. 3. Unripe Capsule, with Calyx & Style.—Fig. 4. Ripe Capsule.—Fig. 5. Transverse section of ditto.—Fig. 6. A Seed.

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* So named, by Sir J. E. SMITH, in honour of ARCHIBALD MENZIES, F. L. S. &c. Surgeon and Naturalist to the expedition under VANCOUVER; in which voyage he collected many specimens of plants on the North-west coast of America, New Holland, Van Diemen's Land, &c.

† See fol. 42, n. †.

Willd. Sp. Pl. v. ii. pt. I. p. 383.—With. (5th ed.) v. ii. p. 462.—*Erica cantabrica, flore maximo, foliis myrti, subtus incanis*, Tourn. Inst. p. 603.—Dill. in Ray's Syn. p. 472.—*Erica hibernica, foliis myrti pilosis subtus incanis*, Pet. Gazoph. p. 6. t. 27. f. 4.—*Andromeda Daboecia*, Linn. Syst. Veg., 13th ed. p. 338.; 14th ed. p. 406.; 15th ed. p. 434.—With. 1st ed. v. i. p. 247.; 2nd ed. v. i. p. 425.—*Vaccinium Cantabricum*, Huds. Fl. Angl (1st ed.) p. 143.—*Dabœ'cia polifolia*, D., Don in Edin. Phil. Journ. 17. p. 160.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 833.—Loud. Arb. et Frutic. Brit. v. ii. p. 1116, with a figure.—Macr. Man. Brit Bot. p. 150.

Localities.—On mountains in the west of Ireland, in a boggy soil. Frequent on dry heaths over all the wild district of Cunnamara, and the mountainous parts of Mayo: *Fl. Hib.*—It is recorded, in Watson's *New Botanist's Guide*, on the authority of Miss Bell, as having been gathered in Sherwood Forest, in Nottinghamshire; but Mr. Watson doubts whether it might not have been planted there.

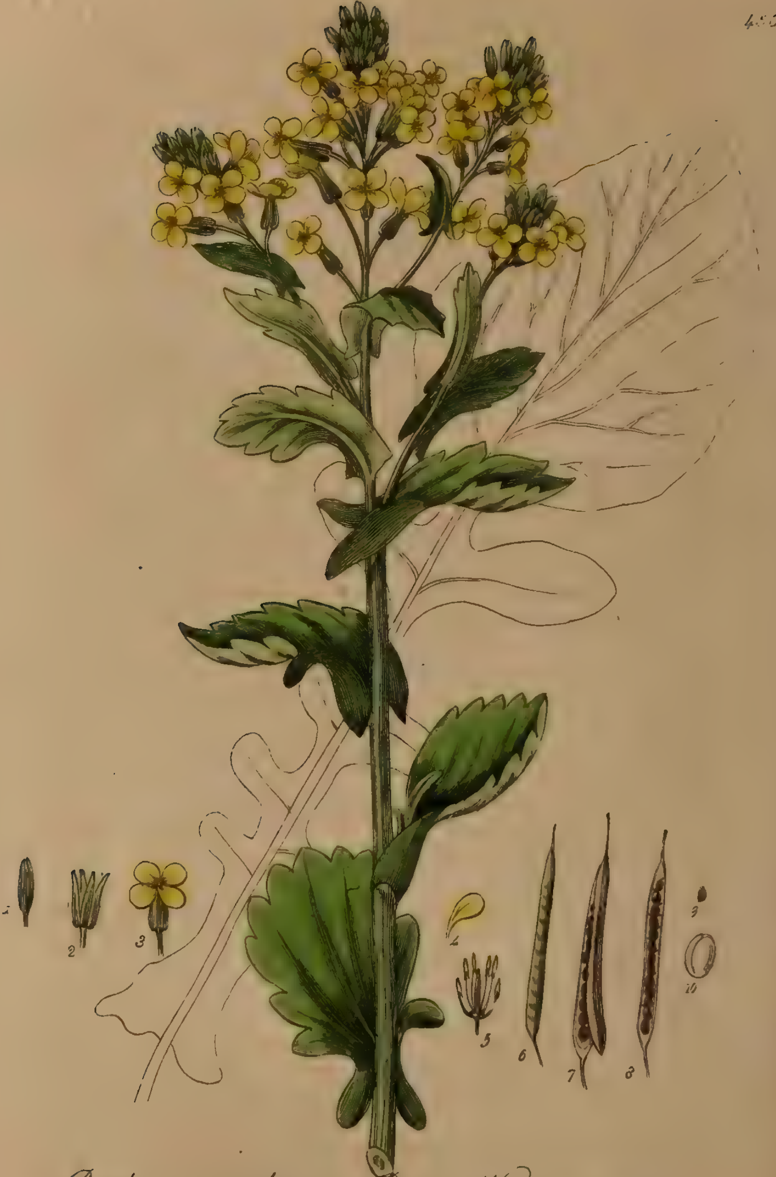
Shrub.—Flowers in June, July, and August.

Stems bushy, from 12 to 18 inches high, much branched, nearly cylindrical, leafy, clothed with projecting hairs, often of a reddish-brown colour. *Leaves* numerous, rather crowded, on short petioles, usually alternate, sometimes opposite, or even three together; dark green and shining above, with a few scattered, glandular hairs; densely clothed with white cottony down beneath, their margins entire, and slightly revolute. *Flowers* large, and handsome, drooping, purplish-red, in terminal, simple *racemes*, each on a simple, somewhat viscid pedicel, accompanied by a small, strap-shaped, hairy bractea at its base. *Calyx* (fig. 1.) in 4, deep, acute, hairy, viscid segments. *Corolla* (fig. 4.) egg-shaped, a little contracted at the mouth, with 4 blunt angles, and 4 recurved segments. *Stamens* (fig. 2.) 8, with white filaments. *Anthers* nearly as long as the filaments, a little shorter than the corolla, brown, somewhat arrow-shaped at the base. *Capsule* (see fig. 5.) of 4 cells, with partitions from the edges of the valves.

A white-flowered variety is cultivated in gardens; it has also been found wild in Ireland, (see *Loud. Mag. Nat. Hist.* v. iv. p. 167.) growing along with the common variety. Both varieties are highly deserving a place in the flower-garden, and are well fitted for decorating the front of shrubberies, or to be grown on rock-work or banks.

The *Natural Order* Ericeæ consists of dicotyledonous *shrubs* or *under shrubs*, with opposite or whorled, mostly evergreen and rigid *leaves*, without stipulæ. The *calyx* is inferior, permanent, and divided into 4 or 5 segments. The *corolla* is of 4 or 5 divisions, regular or irregular, almost hypogynous, generally withering. The *stamens* are definite, and either equal in number to the segments of the corolla, or twice as many. The *anthers* are 2-celled, the cells separating at the apex or at the base, opening by pores, and often furnished with some kind of appendage. The *ovary* is surrounded by a disk or scales, and is many-celled, and many-seeded. The *style* is simple, with an undivided or lobed *stigma*. The fruit is *capsular*, many-celled, and many-seeded, with a central receptacle. The *seeds* are small, and have a fleshy albumen.

The British Genera in this order are—*Erica*, t. 418.—*Calluna*, t. 76.—*Menziesia*, t. 449.—*Azalea*.—*Andromeda*, t. 361.—*Arbutus*—and *Ledum*.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Barbarea vulgaris. Bitter Winter-creſs. ♃

Ruſsell Del. Pub.d by W. Baxter, Botanic Garden Oxford 1841. Mathews. Sc.

BARBARE′A*.

Linnean Class and Order. TETRADYNA′MIA†, SILIQUO′SA‡.

Natural Order. CRUCI′FERÆ§, Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ; subord. PLEURORHIZEÆ‖; tribe, ARABI′DEÆ, Lindl. Syn. pp. 20 & 22; Introd. to Nat. Syst. of Bot. pp. 14 to 18.—Loud. Hort Brit, pp. 498 & 499.; Mag. of Nat. Hist. v. i. pp. 143 & 239.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 & 147.—Mack. Fl. Hib. pt. I. p. 16.—Hook. Brit. Fl. (4th edit.) p. 397.—ROSALES; subord. RHŒADOSÆ; sect. RHŒADINÆ; type, BRASSICACEÆ; subtype, ARABIDÆ; Burn. Outl. of Bot. pp. 614, 784, 847, 854, & 856.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (figs. 1 & 2.) inferior, nearly equal at the base, upright; of 4 oblong, concave, somewhat coloured, deciduous sepals. *Corolla* (fig. 3.) cruciform, of 4 inversely egg-shaped, blunt, undivided, flat petals; their claws (see fig. 4.) nearly as long as the calyx. *Filaments* (see fig. 5.) 6, awl-shaped, simple, distinct, upright, with a *gland* at each side between the two shorter ones and the *pistil.* *Germen* (see fig. 5.) oblong, quadrangular. *Style* (see figs. 5 & 6.) short, cylindrical. *Stigma* blunt, simple. *Pod* (figs. 6 & 7.) 4-angled, and somewhat 2-edged; valves concave, keeled, even and straight; partition (see fig. 8.) membranous, thick-edged. *Seeds* (see fig. 8.) ranged alternately, in a single row, egg-shaped, flattish, not bordered; cotyledons flat, accumbent (o=), see fig. 10.

The upright *calyx;* the 4-angled, slightly compressed *pod;* the *seeds* in a single row; and the two shorter *filaments* with glands at the inside, between them and the pistil; will distinguish this from other genera, with flat accumbent *cotyledons,* in the same class and order.

Two species British.

BARBARE′A VULGA′RIS. Common Winter-cress. Bitter Winter-cress. Yellow Rocket. Herb St. Barbara. Winter Hedge-mustard.

SPEC. CHAR. Lower leaves lyrate, the terminal lobe rounded; upper inversely egg-shaped, toothed, often pinnatifid at the base. Pods linear, bluntly 4-angled, pointed with the style.

Ait. Hort. Kew. (2nd edit.) v. iv. p. 109.—Sm. Engl. Fl. v. iii. p. 198.—With. (7th ed.) v. iii. p. 774.—Gray's Nat. Arr. v. ii. p. 677.—Lindl. Syn. p. 23.—Hook. Brit. Fl. p. 304.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 159.—D. Cand. Prod. v. i. p. 140.—Macr. Man. Brit. Bot. p. 14.—Hook. Fl. Scot. p. 200.—Grev. Fl. Edin. p. 143.—Fl. Devon. pp. 111 & 189.—Johnst. Fl. of Berw. v. i. p. 145.—Winch's Fl. of Northumb. and Durh. p. 44.—Walker's Fl. of Oxf. p. 191.—Loud. Encycl. of Gard. (new edit.) p. 864. paragr. 4459.—Bab. Fl. Bath. p. 4.; Prim. Fl.

Figs. 1 & 2. Calyx.—Fig. 3. Calyx and Corolla.—Fig. 4. A Petal.—Fig. 5. Stamens and Pistil.—Fig. 6. An Unripe Pod.—Fig. 7. Ripe Pod, with the valves separating.—Fig. 8. Partition, showing the attachment of the Seeds.—Fig. 9. A Seed.—Fig. 10. Accumbent Cotyledons, *magnified.*

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[*] From its being formerly dedicated to ST. BARBARA.

[†] See f. 38, n. †. [‡] See f. 62, n. ‡. [§] See f. 38, *a.* [‖] See f. 141, n. ‖.

Sarn. p. 5.—Dick. Fl. Abred. p. 46.—Irv. Lond. Fl. p. 163.—Luxf. Reig. Fl. p. 58.—Cow. Fl. Guide, p. 23.—Baines' Fl. of Yorksh. p. 12.—Leight. Fl. of Shropsh. p. 317.—Gulliv. Pl. Banb. p. 14.—Mack. Catal. Pl. of Irel. p. 62.; Fl. Hibern. p. 19.—*Barbarea*, Johnson's Gerarde, p. 243, with a figure.—Bauh. Hist. v. ii. p. 868. f. 869.—*Erysimum Barbarea*, Linn. Sp. Pl. p. 922.—Huds. Fl. Angl. (2nd edit.) p. 286.—Willd. Spec. Pl. v. iii. pt. I. p. 509.—Engl. Bot. t. 443.—Fl. Dan. t. 985.—Sm. Fl. Brit. v. ii. p. 706.—Bryant's Fl. Diætet. p. 99.—Lightf. Fl. Scot. v. i. p. 355.—Sibth. Fl. Oxon. p. 202.—Abbot's Fl. Bedf. p. 144.—Thomp. Pl. of Berw. p. 67.—Davies' Welsh Bot. p. 64.—Purt. Midl. Fl. v. i. p. 305.—Relh. Fl. Cant. (3rd ed.) p. 268.—*Eruca lutea seu Barbarea*, Ray's Syn. p. 297.

Localities.—In moist waste places, about hedges, banks of ditches, and in marshy meadows; frequent.

Perennial.—Flowers from May to August.

Root tapering, somewhat woody. *Stem* from 12 to 18 inches high, upright, stout, simple or branched, angular and furrowed, smooth, leafy. *Leaves* alternate, lower ones lyrate, with a large, roundish, terminal lobe; upper ones inversely egg-shaped, toothed, often pinnatifid; all smooth, strongly ribbed, of a firm texture, and clasping the stem by their arrow-shaped base. *Flowers* small, bright yellow, in roundish, corymbose clusters. *Sepals* oblong-egg-shaped, concave, 3-ribbed, upright. *Petals* twice the length of the sepals, inversely egg-shaped, veiny, their claws upright, the limb spreading. *Pod (siliqua)* upright, strap-shaped, smooth, not very acutely 4-angled, six times as long as the spreading pedicel, crowned with the narrow, rather elongated, *style*, which is about half the length of the pedicel. *Seeds* inversely egg-shaped, compressed, minutely and deeply pitted.

A variety with double flowers is cultivated in gardens, under the name of Double Yellow Rocket.

The whole herb has a nauseous bitter taste, and is in some degree mucilaginous; it is sometimes cultivated as a Spring salad, but it has nothing in flavour to recommend it. In Sweden they boil the leaves as kale. Cows are said to eat this plant; horses and swine to refuse it; goats and sheep are not fond of it.—A minute species of *Tipula*, or Gall Gnat, sometimes renders the flowers like a Hop-blossom; but this metamorphosis does not strictly partake of the nature of galls, as it originates not from the egg, but from the larva, which, in the operation of extracting the seed in some way imparts a morbid action to the juices, causing the flower to expand unnaturally. A parasitical, white fungus, *Uredo candida*, of Persoon, is common on the under side of the leaves, and on the stem of this plant, in the Summer.

I long to hold communion safe as sweet
With trees and flowers; they are no demagogues,
They teach no treason, nor with guilty strife
Seek for advancement through another's fall:
The flow'ret that on scarce an inch of earth
Peeps through the crevice of some mossy wall,
Is as contented as the giant oak
That covers half an acre with its shade *.

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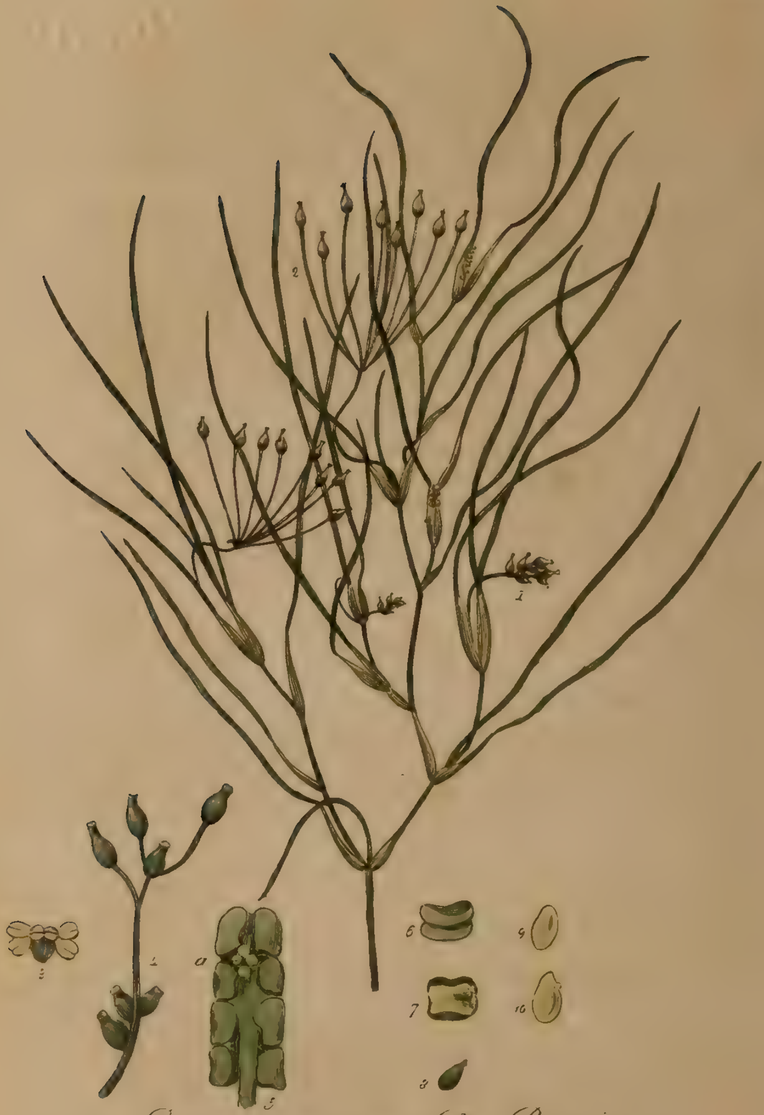
* See a volume of delightful poetry, by the author of "The Moral of Flowers," intituled, "Recollections of the Lakes, and other Poems."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Ruppia maritima Sea Ruppia ♃

[illegible] Pub^d. by W. Baxter, Botanic Garden, Oxford. 1841. Mathews sc.

RU'PPIA[*].

Linnean Class and Order. TETRA'NDRIA[†]. TETRAGY'NIA.

Natural Order. FLUVIA'LES[‡], *Vent.*—Lindl. Syn. p. 248.; Introd. to Nat. Syst. of Bot. p. 289.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 264.—NAIADES, Juss. Gen. Pl. p. 18.—Sm. Gram. of Bot. p. 66.—Hook. Brit. Fl. (4th ed.) p. 423.—NAJADEÆ, Rich. by Macgilliv. p. 387.—JUNCALES; sect. NAYADINÆ; type, NAYADACEÆ; Burn. Outl. of Bot. v. i. pp. 403 and 413.—INUNDATÆ, *Linn.*

GEN. CHAR. Flowers 2, on a *spadix* arising from the sheathing bases of the leaves (see figs. 1, 2, & 5.), which perform the office of a spatha. *Calyx* and *Corolla* none. *Anthers* (see fig. 3.) 4, sessile, irregularly quadrangular, depressed, bursting by a horizontal transverse fissure. *Germens* (see figs. 3 & 4.) 4, occasionally 5, turbinate, at length stalked (see fig. 2). *Styles* none. *Stigmas* blunt, depressed in the centre. *Fruit* (see figs. 4 & 8.) dry, egg-shaped, 1-seeded, crowned by the permanent stigma, and each elevated on a stalk, 4 or 5 times its own length.

The solitary *spadix* (fig. 5.), bearing only 2 *flowers*, each of 4 *germens*, without either *calyx* or *corolla;* and the stalked *fruit;* will distinguish this from other genera in the same class and order.

It has the habit of *Potamogeton*, but it differs from that genus in the want of a *corolla*, in the posture as well as shape of the *anthers*, and in the stalked *fruit*. SM.

One species British.

RU'PPIA MARITIMA. Sea Ruppia. Tassel Pond-weed. Sea Fennel.

SPEC. CHAR.

Engl. Bot. t. 136.—Hook. Fl. Lond. t. 50.—Linn. Sp. Pl. p. 184.—Huds. Fl. Angl. (2nd ed.) p. 77.—Willd. Sp. Pl. v. i. pt. I. p. 717.—Sm. Fl. Brit. v. i. p. 198; Engl. Fl. v. i. p. 237.—With. (7th ed.) v. ii. p. 260.—Gray's Nat. Arr. v. i. p. 32.—Hook. Brit. Fl. p. 77.—Lindl. Syn. p. 251.—Macr. Man. Brit. Bot. p. 224.—Light. Fl. Scot. v. i. p. 124. t. 8. f. 1.—Davies's Welsh Bot. p. 18.—Relh. Fl. Cant. (3rd edit.) p. 70.—Hook. Fl. Scot. p. 59.—Grev. Fl. Edin. p. 42.—Rev. G. E. Smith's Pl. of S. Kent, pp. 9—12. t. 1. f. 1.—Fl. Devon. pp. 31 & 113.—Winch's Fl. of Northumb. and Durh. p. 11.—Murray's Northern Fl. p. 111.—Bab. Prim. Fl. Sarn. p. 100.—Irv. Lond. Fl. p. 85.—Baines' Fl. of Yorksh. p. 97.—Mack. Catal. Pl. of Irel. p. 20.; Fl. Hibern p. 267.—*Potamogeton maritimum, gramineis longioribus foliis, fructu fere umbellato*, Ray's Syn. p. 134. t. 6. f. 1.—*Potamogeton maritimum pusillum alterum*, Pluk. Phyt. t. 248. f. 4.—*Fucus ferulaceus*. Johnson's Gerarde, p. 1573.—*Tassel Pond-weed*, Petiv. H. Brit. t. 6. f. 1.—*Baccaferrea maritima, foliis acutissimis; etiam foliis minus acutis*, Mich. Gen. p. 72. t. 35.

Fig. 1. Fruit in a young state.—Fig. 2. The same, advanced to maturity.—Fig. 3. A single Flower.—Fig. 4. Spadix, showing ripe pedicelled Fruit in the superior part.—Fig. 5. Spadix of Flowers seen from its anterior side, *a.* the germens.—Fig. 6. Anther.—Fig 7. Same burst open.—Fig. 8. Fruit or Nut, natural size.—Fig. 9. Seed, back view of.—Fig. 10. Side view of ditto, showing its point of attachment to the Capsule.—Figs. 4 to 10, from Fl. Lond.

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[*] So named in honour of HENRY BERNARD RUPPUIS, author, in 1718, of *Flora Jenensis.*

[†] See fol. 46, note †.

[‡] See fol. 350, *a.*

Localities.—In salt-water pools and ditches.—*Cambridgesh.* Ditches below Wisbeach.—*Cornwall;* Salt ditches.—*Devon;* Exminster and Powderham Marshes; salt ditches near Starcross; and Braunton Burroughs.—*Dorset;* Ditches on the coast; at Pool.—*Durham;* Near Tees' Mouth.—*Essex;* In a ditch by the road-side between Heybridge and Goldhanger, near Maldon —*Hants;* By the ferry over the river Itchen, near Southampton.—*Kent;* Dikes and pools near the sea at Dimchurch; and in the marsh ditches at Sheppey, plentiful.—*Norfolk;* Salt-water ditches near Yarmouth; Caistor; Bradwell, &c.—*Northumberland;* In Meggy's Bourn, north of Seaton Sluice.—*Somerset;* Salt marsh at the base of Brean Down.—*Suffolk;* Salt-marsh ditches at Aldborough and Orford; at Dunwich; and about Yarmouth.—*Sussex;* Rye and Shoreham: W. Borrer, Esq. Salt-pans Birdham, near Chichester; and in Chichester Creek: Mr. E. Jenner.—*Yorksh.* Salt-water ditches in the marshes at Coatham: Mr. Baines. Tees' Mouth.—WALES. *Anglesea;* Not rare; between Beaumaris and Penmon, &c.; near Llanddwyn.—*Caernarvonsh.* Ditches between Treath Mawr and Pont Aberglaslyn.—*Denbighsh.* Not common.—SCOTLAND. *Elginsh.* Kinloss, near the School-house.—*Forfarsh.* Montrose.—*Haddingtonsh.* Salt-water pools on Guillon Links; Aberlady Bay. —*Inverness-shire;* Glen Elg.—*Kincardinesh.* In the neighbourhood of Bervie.—*Kirkcudbrightsh.* Kirkcudbright Loch. [For authorities, see N. B. G.]—IRELAND. Near the N. Wall, Dublin. Near Passage, county of Cork. Abundant along the shore of Lough Foyle. *Fl. Hibern.*

Perennial.—Flowers in July and August.

Plant submersed. *Roots* fibrous, in tufts from several of the lower joints of the stem. *Stems* long, slender, thread-shaped, flexuose, much branched, leafy. *Leaves* alternate, strap-shaped, very narrow, more or less pointed, channelled; clasping the stem with their *sheaths*, which are sometimes narrow and small, at other times large and inflated. *Spadix* (see figs. 4 & 5.) at first very short, included in the sheath of the leaves, with 2 green *flowers*, one above another on opposite sides, and quite destitute of either calyx or corolla. *Anthers* (see fig. 3.) 4, large, sessile, bursting horizontally, 1-celled. Mertens and Koch say that each pair is, in fact, the 2 cells of 1 anther; and that there are, in reality, but 2 sessile stamens. *Pollen*, a tube with 3 globules, one in the middle, and one at each end of the tube. *Germens* (see fig. 5, *a.*) 4, occasionally 5 or 6, resembling minute tubercles in the centre between the anthers; as these approach maturity their base elongates into a fruit-stalk, one or two inches long (see fig. 2.); each then becomes an oblique, egg-shaped, more or less pointed, *pericarp*, (see fig. 8.), inclosing a single seed.

This plant, when not in fruit, very much resembles *Potamogeton pectinatum.* "Its whole history," observes the Rev. G. E. Smith, "is deeply interesting, and raises the humble and hidden tenant of the dyke to rivalry with the celebrated *Valesneria;*" for, like that plant, it lengthens or contracts its flower-stalk according to the greater or less depth of the water; and, assuming a spiral form, the flowers are thus elevated above the surface, where the anthers burst, and discharge their pollen, after which the flower-stalk, bearing the fertilized stigmas, sinks within the bosom of its parent plant.

For many interesting particulars relative to the history and economy of this curious plant, see Hooker's *Flora Londinensis*, t. 50.; and the Rev. G. E. Smith's *Catalogue of Plants*, collected in South Kent, pp. 9—12.

The specimen from which the drawing for the accompanying plate was made, was kindly communicated to me by my friend Mr. E. Jenner, of Lewes, Sussex.

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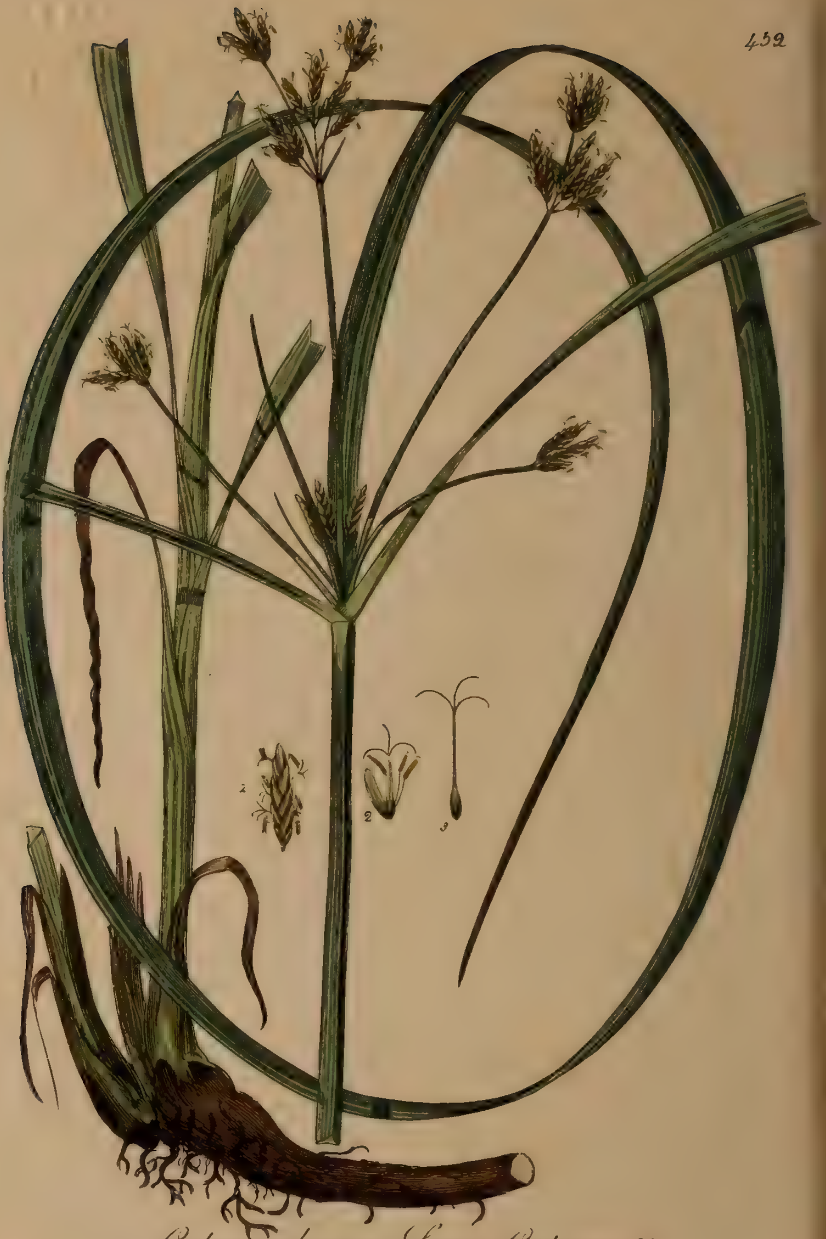

Cyperus longus Sweet Cyperus. ♃

Mathews Del. &c. Pub^d by W. Baxter, Botanic Garden Oxford. 1841

CYPE'RUS*.

Linnean Class and Order. TRIA'NDRIA†, MONOGY'NIA.

Natural Order. CYPERA'CEÆ‡, *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—CYPEROIDEÆ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—CYPERALES; sect. CYPERINÆ; type, SCIRPACEÆ; Burn. Outl. of Bot. v. i. pp. 354 & 357.—CALAMARIÆ, *Linn.*

GEN. CHAR. *Spikelets* (fig. 1.) mostly strap-shaped, compressed, of numerous *flowers* (see fig. 2). *Glumes* (see fig. 2.) of one valve, uniform, keeled, imbricated in 2 opposite ranks, all perfect, except one or two at the bottom. *Filaments* (see fig. 2.) 2 or 3, short. *Anthers* strap-shaped. *Germen* (see figs. 2 & 3.) roundish, without bristles beneath. *Style* (see fig. 3.) simple at the base, deciduous. *Stigmas* (see fig. 3.) 2 or 3. *Seed* pointed, smooth, loose.

The 2-ranked, many-flowered *spikelets*; the *glumes* of 1 valve, equal, and nearly all fertile; and the inarticulated, deciduous *style*, without bristles; will distinguish this from other genera in the same class and order.

Two species British.

CYPE'RUS LO'NGUS. Long Cyperus. Sweet Cyperus. English Galingale.

SPEC. CHAR. Stem triangular. Spikelets strap-spear-shaped, nearly upright, in doubly compound umbels. General Involucrum very long, leafy; partial one small.

Engl. Bot. t. 1309.—Jacq. Icon. Ror. t. 297.—Johnson's Gerarde, p. 30 †.—Ray's Syn. p. 425.—Linn. Sp. Pl. p. 67.—Huds. Fl. Angl. (2nd ed.) p. 17.—Willd. Sp. Pl. v. i. pt. I. p. 285. *excl. Rottb. Syn.*—Sm. Fl. Brit. v. i. p. 47.; Engl. Fl. v. i. p. 53.—With. (7th ed.) v. ii. p. 106.—Gray's Nat. Arr. v. ii. p. 70.—Lindl. Syn. p. 279.—Hook. Brit. Fl. p. 19.—Macr. Man. Brit. Bot. p. 245.—Schrad. Germ. v. i. p. 120.—Rev. G. E. Smith's Pl. of S. Kent. p. 3.—Bab. Prim. Fl. Sarn. p. 101.—Irv. Lond. Fl. p. 217.—*Cyperus longus odoratus*, Bauh. Theat. p. 216.—Moris. v. iii. p. 237. sect. 8. t. 11. f. 13.—*Cyperus odoratus, radice longa*, Scheuchz. Agrost. p. 378. t. 8. f. 12.

LOCALITIES.—In marshes, but very rare.—*Kent*; This rare and very elegant Grass is spread over a confined, black, boggy track at Whiting Brooks, above the Warren, near Seabrooke: Rev. G. E. SMITH.—*Somerset*; In an old fish-pond at the back of a cottage at Walton-in-Gordano: B. G.—*Wilts*; In 1839, Mr. PEETE found about a quarter of an acre of *Cyperus longus*, within a quarter of a mile of Boyton House: Mr. W. PAMPLIN, jun. in N. B. G.—WALES. *Pembrokeshire*; By a little rivulet that runs into Whitsand Bay, between St. David's Town and St. David's Head: Sir JOHN CULLUM.

Perennial.—Flowers in July and August.

Root moderately creeping, aromatic, and astringent. *Culm (stem)* from 2 to 3 feet high, simple, without joints, triangular, smooth, shining, leafy and sheathing at the bottom. *Leaves* long, and narrow, striated, very rough on the upper surface and at the margins,

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Fig. 1. A Spikelet.—Fig. 2. A separate Flower.—Fig. 3. Germen, Style, and Stigma.—Figs. 2 & 3, *magnified.*

[*] From *kyparos*, Gr. a *vase*, or *round vessel*; in allusion to the form of the root.

[†] See fol. 56, note †.

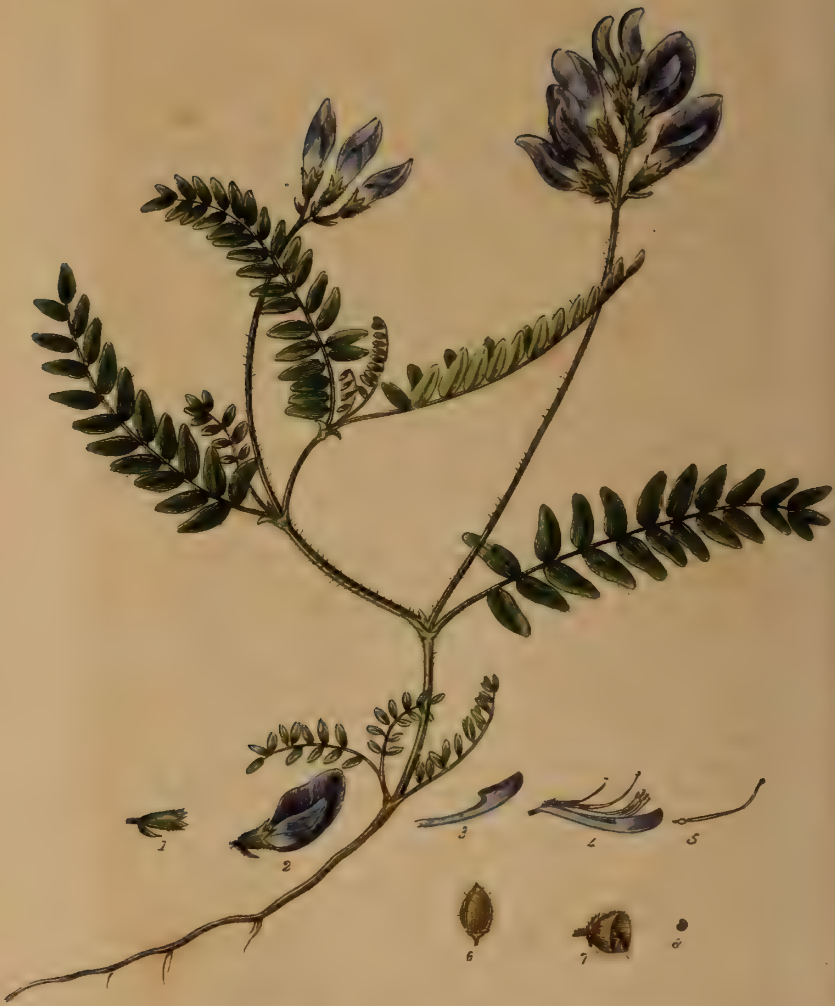
[‡] See fol. 436, *a*.

smooth beneath; sheaths very long, especially those of the leaves which rise highest, as they all run down to the base of the stem. *Umbel* large, terminal, accompanied by an involucrum of 4 or 5 leaves, one of which is often nearly or quite 2 feet long. *Peduncles* triangular, smooth, the outer one about 6 inches long, the rest gradually shorter, each with a sheathing bractea at its base. *Pedicels (partial flower-stalks)* slender, triangular, smooth, from the 8th of an inch to an inch long, subtended by small bracteas. *Spikelets* shining brown, narrow, upright, 5 or 6 together, loosely spreading in two directions. *Stigmas* 3.

This is a very graceful plant, and is found wild in France, Germany, Italy, Sicily, and Carniola, as well as in Britain. The root has a pleasant aromatic smell, and a warm bitter taste; but it is not used medicinally, though Dr. WITHERING says, perhaps it is not inferior to some more costly medicines brought from abroad.

" From earliest childhood I have ever found
Companionship in flowers, and shall methinks
Until my dying day. They seem, fair things,
(At least when Fancy gifts them with her spell)
To understand and share my every mood
More readily than creatures rational.
If glad of heart, they give me smile for smile,
If sorrowful, they yield me solace sweet,
Or if to holier thoughts my heart incline,
They never check, like the cold scorning world,
My heavenly aspirations, but at once
Take up a serious, monitory strain,
And preach sweet homilies more touching far
Than oftèn flow from learned doctor's tongue.
Next to that Book which shows to guilty man
How he, through mercy infinite, may gain
More than he lost in Eden, I do rank,
And justly so, sweet nature's varied lore,
For well it seconds many a glorious truth
Which in that better record stands reveal'd.
The furious hurricane that rends the heavens,
And makes the scared and desolated earth
Reel like a drunkard, the resistless flood,
The barren waste, nay, e'en the very thorn
Which wounds our finger when we pluck the flower,
And noxious weed that ' mocks the hope of toil,'
Do all attest one truth, man's foul revolt.
The changing seasons, winter's death-like reign,
So soon succeeded by the bloom of spring,
What are they but the types of man's decease
And resurrection? The blithe birds which build
Beneath our cottage eaves,—the smiling flowers
Which decorate the hedgerow and the mead,
Do they not mind us to repose our trust
On HIM, who feeds and clothes them day by day?
What says the lip of Wisdom? ' Mark the fowls,
Which neither sow, nor reap, nor store in barns,
And yet your heavenly Father feedeth them.
Consider too the lilies, how they grow,
They neither toil nor spin, and yet I say
That Solomon in all his glorious pomp
Was not array'd like these. Wherefore if GOD
Thus clothes the grass, so soon to pass away,
And feed the fowls of heaven, shall HE not then
Much rather for your daily wants provide,
O ye of little faith?' "

From *Recollections of the Lakes*, by the author of
the " Moral of Flowers."



Astragalus hypoglottis: Purple Milk-vetch ♃

Russell Del. Pub^d. W Baxter Botanic Garden Oxford 1840 Mathews Sc

ASTRA′GALUS[*].

Linnean Class and Order. DIADE′LPHIA[†], DECA′NDRIA.

Natural Order. LEGUMINO′SÆ, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75.; Introd. to Nat. Syst. of Bot. p. 87.—Rich. by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 91.—Mack. Fl. Hibern. p. 73.—Hook. Brit. Fl. (4th edit.) p. 404.—LEGUMINA′CEÆ, Loud. Arb. Brit. p. 561.—PAPILIONAC′EÆ[‡], *Linn.*—ROSALES; sect. CICERINÆ, subsect. LOTIANÆ; type, LOTACEÆ; subtype, LOTIDÆ; Burn. Outl. of Bot. pp. 614, 638, 642, & 644.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, permanent, with 5 acute teeth, the lower ones gradually longest. *Corolla* (see fig. 2.) papilionaceous, of 5 petals; standard (fig. 2.) egg-shaped, blunt, upright, longer than the rest; wings (see fig. 2.) oblong, somewhat half egg-shaped, shorter than the standard; keel (fig. 3.) as long as the wings, rounded in front, of 2 united petals, with separate claws. *Filaments* (see fig. 4.) 10; 9 united in one compressed tube, open above; the tenth hair-like, usually shorter, quite separate. *Anthers* roundish. *Germen* oblong, compressed. *Style* (see figs. 4 & 5.) awl-shaped, ascending, smooth. *Stigma* blunt. *Legume* (see figs. 6 & 7.) variously shaped, more or less tumid, of 2 longitudinal cells; the partition double, more or less complete, from the lower suture being turned inwards. *Seeds* (fig. 8.) one or more, kidney-shaped.

The blunt *keel of the corolla*; the 2-celled, or partially 2-celled, *legume*, with the margins of the lower suture turned inwards; will distinguish this from other genera, with diadelphous stamens, in the same class and order.

Three species British.

ASTRA′GALUS HYPOGLO′TTIS[§]. Tongue-under-tongue. Milk Vetch. Purple Milk Vetch. Purple Milk-wort. Purple Cock's-Head.

SPEC. CHAR. Stems prostrate, rather hairy. Leaflets slightly emarginate. Legumes egg-shaped, upright, capitate, hairy; their cells 1-seeded.

Engl. Bot. t. 274—Linn. Mant. v. ii. p. 274.—Willd. Sp. Pl. v. iii. pt. II. p. 1285.—Sm. Fl. Brit. v. ii. p. 779.; Engl. Fl. v. iii. p. 294.—With. (7th ed.) v. iii. p. 849.—Gray's Nat. Arr. v. ii. p. 608.—Lindl. Syn. p. 78.—Hook. Brit. Fl. p. 325.—De Cand. Prod. v. ii. p. 281.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 253.—Macr. Man. Brit. Bot. p. 56.—Sibth. Fl. Oxon. p. 227.—Thomps. Pl. of Berw. p. 74.—Relh. Fl. Cant. (3rd ed.) p. 297.—Hook. Fl. Scot. p. 217.—Grev. Fl. Edin. p. 159.—Johnst. Fl. of Berw. v. i. p. 161.—Winch's Fl. of Northumb. and Durham,

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Fig. 1. Calyx and Bractea.—Fig. 2. Corolla, with the Calyx and Bractea.—Fig. 3. Keel.—Fig. 4. Keel, with the Stamens and Pistil.—Fig. 5. Germen, Style, and Stigma.—Fig. 6. Legume.—Fig. 7. Transverse section of Legume.—Fig. 8. Seed.

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[*] From *astragalos*, Gr. the *vertebra*; in allusion to the knotted root of that individual plant to which it was formerly applied.

[†] See folio 77, note †.

[‡] See folio 117, note ‡.

[§] From *hypo*, Gr *under*; and *glotta*, Gr. a *tongue*; in reference to the shape of the Legumes.

p. 48.—Walker's Fl. of Oxf. p. 211.—Dick. Fl. Abred. p. 48.—Irv. Lond. Fl. p. 176.—Baines' Fl. of Yorksh. p. 30.—Mack. Fl. Hibern. p. 76.—*Astragalus arenarius*, Fl. Dan. t. 614.—Huds. Fl. Angl. (2nd ed.) p. 323.- Lightf. Fl. Scot. v. i. p. 400.—*Astragalus incanus parvus purpureus nostras*, Ray's Syn. p. 326. t. 12. f. 3.

Localities.—On hills, and open mountainous heaths, in a dry gravelly, chalky, or sandy soil; also on the sea coast.—*Oxfordsh.* Burford Downs: Dr. Sibthorp. Under a wall on the side of the road between Witney and Burford, about 3 or 4 miles from the latter place; June, 1831: W. B.—*Beds;* Hills near Dunstable: Mr. Woodward.—*Cambridgesh.* Gogmagog Hills; Shelford Moor; Hildersham; Barrington Hill, near Linton; Newmarket Heath; Linton, and Teversham: Rev. R. Relhan. Between Newmarket and Chippenham; Fleam Dyke; N. B. G.—*Cumberland;* Keswick: Mr. Hutton.—*Durham;* On the sandy banks of the sea-coast near Whitburn; South Shields; Seaton Carew; Blackwell, six miles from Hartlepool; and near the mouth of the Tees: N. J. Winch, Esq. Durham: N. B. G —*Gloucestersh.* Beaumonts Hay; Upper Slaughter; and Barrington Bushes: Rev. E. F. Witts.—*Hants;* Carisbrook Castle Hill: Mr. Griffith.—*Leicestersh,* Charnwood Forest, very rare: Rev. A. Bloxam.—*Lincolnsh.* Near Grantham, on the Heath: D. Turner, Esq. On Lincoln Heath: Sir T. G. Cullum.—*Norfolk;* On Swaffham Heath: Mr. Woodward. Barton Bendish, on the road to Swaffham: Rev. R. Forby.—*Northumberland;* On the summit of Ratcheugh Crag near Alnwick; and on the Links at Tynemouth; Dunstanborough; Holy Island; Budle; Bamborough: Beadnel; and north of Newbiggin: N. J. Wink, Esq. On Spittal Point; and Banks to the southward; Links beyond Scrammerston; and on Holy Island near the Castle: Thompson. Near St. Mary's Isle: N. B G.—*Suffolk;* About Bury: Sir T. G. Cullum Newmarket Heath, on both sides of the town: Rev. G. Crabbe.—*Worcestersh.* Near the summit of Bredon Hill, at the height of 800 feet, the only habitat in the county: Mr. E. Lees.—*Yorksh.* On the Wolds near Birdsall; and by the road from Malton to Settrington; Seamer Moor, and Ganton Dale near Scarborough; Thorp Arch; Park at Ebberston Lodge, and other pastures near Malton: B. G. Jack-Daw Cragg, two miles West of Tadcaster; road-sides from Sherburn to Huddlestone Quarry; Longton Wold; Lime Hills at Kippax; near the Pyramid at Castle Howard; near Hazelwood; Pigburn Fields, near Doncaster; on Welburn Moor; Clifford Moor, near Wetherby; and on the Limestone Track near Leeds: N. B. G., & *Fl. of Yorksh.*—SCOTLAND. In the counties of *Aberdeen; Berwick; Edinburgh; Elgin; Fife; Forfar; Haddinton; Perth;* and *Ross.*—IRELAND. On the largest of the S. Islands of Arran: *Fl. Hibern.*

Perennial.—Flowers in June and July.

Root creeping, slender, woody. *Stems* several, from 2 to 6 or 8 inches long, slightly branched, procumbent, leafy, rather hairy. *Leaves* pinnate, of many little egg-shaped, blunt, dark-green *leaflets*, sometimes rather emarginate; coarsely hairy on both sides. *Stipulas* egg-shaped. *Flowers* variegated with purplish blue and white, rarely quite white, in roundish heads, on axillary peduncles from 2 to 6 inches long. *Calyx* twice as long as the bractea, clothed with black and white hairs intermixed. *Legumes* egg-shaped, turgid, deeply channelled along the back, compressed, hairy; hooked at the point, 2-celled; cells 1-seeded.

This very pretty plant is a native of many other parts of Europe as well as of Britain, as it is also of Barbary, Tauria, Siberia, and North America, on hills and mountains.

The drawing for the annexed plate was made from a specimen gathered between Witney and Burford, by my much-esteemed friend Mr. J. Haines, sen. of the Radcliffe Library, who kindly communicated it to me.

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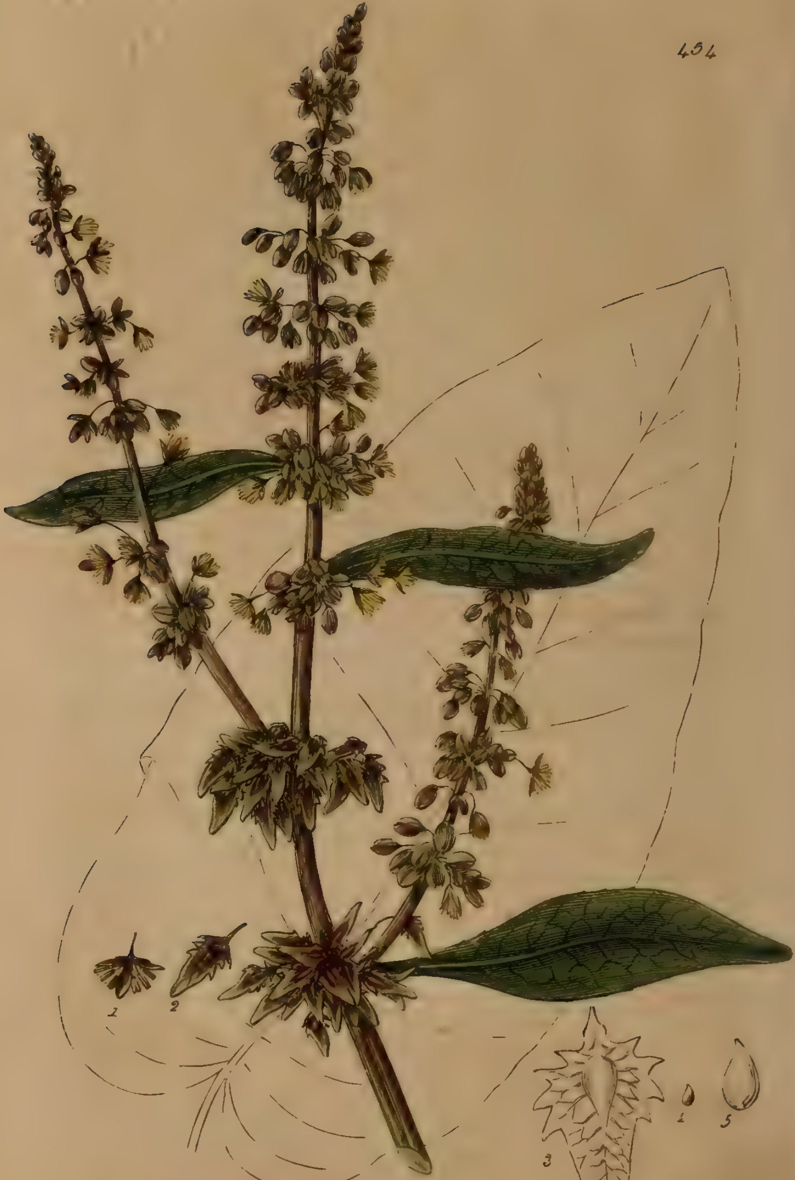

Rumex obtusifolius. Broad-leaved Dock. ♃

Fussell Del.

Pub.d by W. Baxter Botanic Garden Oxford 1839

Mathews Sc.

RU′MEX *.

Linnean Class and Order. HAXA′NDRIA †, TRIGY′NIA.

Natural Order. POLYGO′NEÆ ‡, Juss. Gen. Pl. p. 82.—Sm. Gr. of Bot. p. 90.—Lindl. Syn. p. 209; Introd. to Nat. Syst of Bot. p. 169.—Rich. by Macgilliv. p. 424.—Loud. Hort. Brit. p. 531.—Mack. Fl. Hibern. p. 220.—Hook. Fl. Brit. (4th edit.) p. 417.—QUERNEALES; sect. RUMICINÆ; type, POLYGONACEÆ; Burn. Outl. of Bot. v. ii. pp. 523, 587, & 596.—HOLERACEÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1.) inferior, of 3 blunt, spreading, permanent sepals, more or less united at the base. *Corolla* (see figs. 1.) of 3 egg-shaped petals, larger than the calyx, but similar in hue, though thinner in texture, and more veiny, subsequently enlarged, converging round the seed, and permanent (see fig. 2.), bearing, in some species, a dorsal grain or tubercle, (see fig. 3). *Filaments* (see fig. 1.) 6, hair-like, very short. *Anthers* upright, oblong, of 2 lobes. *Germen* superior, triangular, rather turbinate; sometimes in a separate flower. *Styles* 3, hair-like, spreading, protruding between the petals. *Stigmas* large, in many fine tufted segments. *Seed-vessel* none, except the enlarged, closed petals. *Seed (nut)* (see figs. 4 & 5.) 1, triangular, polished, with 3 sharp edges; *embryo* oblong, at one side of the *albumen.*

The *calyx* of 3 sepals, combined at the base; the *corolla* of 3 petals; the many-cleft *stigmas*; and the triangular *nut*, covered by the enlarged petals; will distinguish this from other genera in the same class and order.

Fourteen species British.

RU′MEX OBTUSIFOLIUS. Blunt-leaved Dock. Broad-leaved Dock. Common Dock. Butter Dock. Red Shanks.

SPEC. CHAR. Radical leaves heart-shaped, blunt, wavy and crisped at the margins. Enlarged Petals oblongo-triangular, reticulated, toothed at the base, with an entire point, one principally tuberculated. Whorls approximate, nearly leafless.

Engl. Bot. t. 1999.—Curt. Fl. Lond. t. 168.—Linn. Sp. Pl. p. 478.—Huds. Fl. Angl. (2nd ed.) p. 155.—Willd. Sp. Pl. v. ii. pt. I. p. 255.—Sm. Fl. Brit. v. i. p. 392.; Engl. Fl. v. ii. p. 192.—With. (7th ed.) v. ii. p. 457.—Lindl. Syn. p. 210.—Hook. Brit. Fl. p. 169.—Macr. Man. Brit. Bot. p. 198.—Lightf. Fl. Scot. v. i. p. 189.—Sibth. Fl. Oxon. p. 118.—Abbot's Fl. Bedf. p. 81.—Thomp. Pl. of Berw. p. 37.—Davies' Welsh Bot. p. 35.—Purt. Midl. Fl. v. i. p. 184.—Relh. Fl. Cant. (3rd edit.) p. 148.—Hook. Fl. Scot. p. 113.—Grev. Fl. Edin. p. 83.—Fl. Devon. pp. 64 & 139.—Johnst. Fl. Berw. v. i. p. 83.—Winch's Fl. of Northumb. & Durh. p. 23.—Walker's Fl. of Oxf. p. 103.—Bab. Fl. Bath. p. 43.; Prim. Fl. Sarn. p. 85.—Dick. Fl. Abred. p. 34.—Irv. Lond. Fl. p. 124.—Luxf. Reig. Fl. p. 32.—Cow. Fl. Guide, p. 45.—Baines' Fl. of Yorksh. p. 86.—Leight. Fl. of Shropsh. p. 155.—Gull. Pl. of Banb. p. 8.—Mack. Catal. Pl. of Irel. p. 35.; Fl. Hibern. p 222.—*Lapathum obtusifolium*, Moench. Meth. p. 256.—Gray's Nat. Arr. v. ii. p. 374.—*Lapathum vulgare, folio obtuso*, Ray's Syn. p. 141.—*Lapathum sylvestre, folio minus acuto*, Johnson's Gerarde, p. 388.

Fig. 1. A Flower.—Fig. 2. The same when the petals are enlarged, and enclose the ripe seed.—Fig. 3. A granulated Petal.—Fig. 4. A Seed.—Fig. 5. Ditto.—Figs. 3 and 5 *magnified.*

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* So named by the Romans from a sort of spear, the shape of which the leaves of several species of the genus nearly resemble. WITHERING.

† See folio 33, note †.

‡ See folio 311, *a*.

LOCALITIES.—By way-sides, in waste places, and in pastures; too common.

Perennial.—Flowers in July and August.

Root tapering, running deeply and perpendicularly into the ground, simple or branched, of a dirty brown colour on the outside, yellowish within. *Stems* from 2 to 3 feet high, upright, branched, solid, round, deeply furrowed, leafy, roughish upwards. *Leaves* all petiolate, smooth, except on the under surface where the veins and also the petioles are rough; *radical ones* very large, broad, and more or less heart-shaped at the base; *those of the stem* narrower and acute, the uppermost spear-shaped, and tapering at both ends. *Clusters* elongated, of numerous, many-flowered whorls, which are near together, except a few of the lower ones, which are more distant and leafy. *Enlarged Petals* oblong, blunt, veiny, with about 3 teeth on each margin, one of them also bearing a brown or reddish tubercle, of a smaller proportion than in most species. *Seed* rather large, egg-shaped, acute, with 3 sharp angles.

The broad, blunt radical leaves, and the oblongo-triangular form of the enlarged petals, will distinguish this from the other species.

It is a most troublesome weed, being very tenaceous of growth by its roots, and producing a great increase of seed. It can be only conquered by stubbing up the root; mowing is to little purpose.

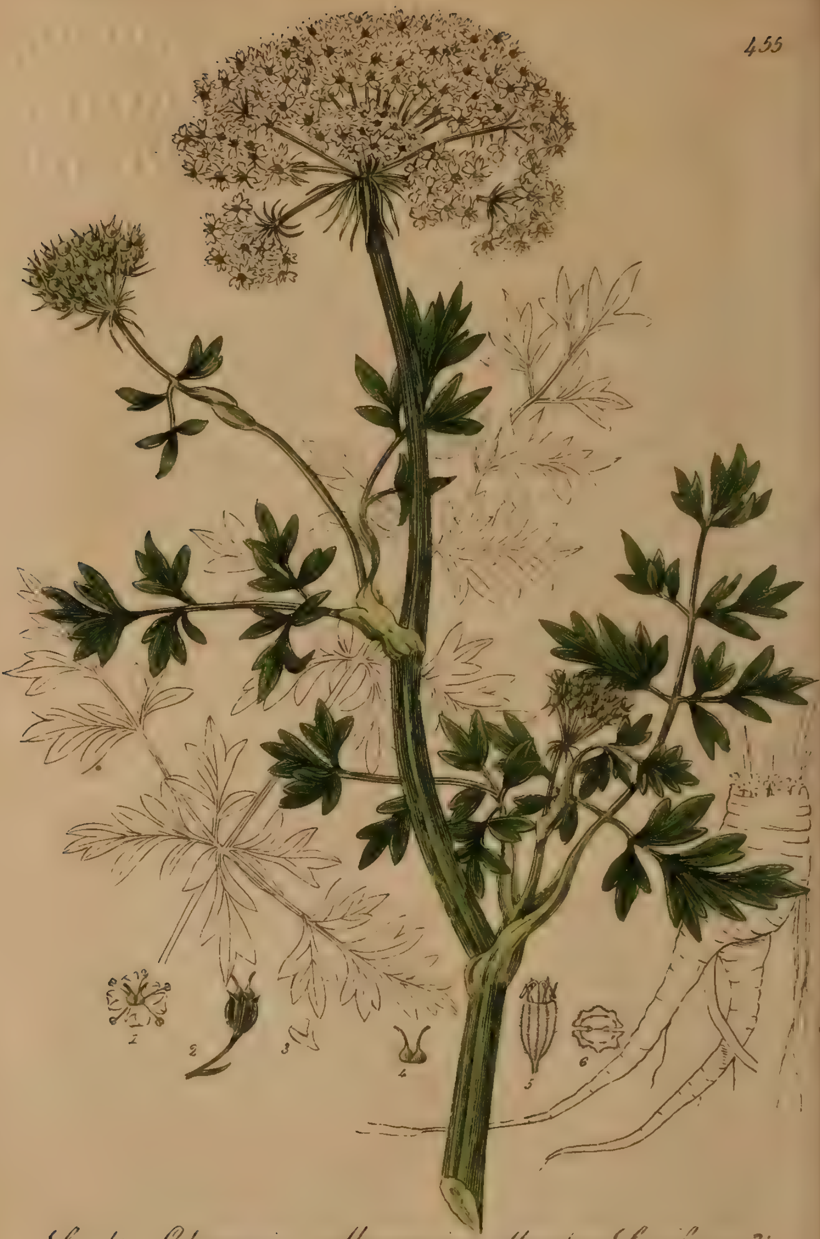
SWIFT seems to have been aware of this when he wrote the following lines:—

My love for gentle Dermot faster grows
Than yon tall *Dock*, that rises to thy nose:
Cut down the Dock, 'twill rise again; but know
Love rooted out, again will never grow.

Dr. WITHERING observes, that Fallow Deer eat both this and *Rumex acutus* with avidity, biting it close to the root, so that it is very rare to see a Dock growing in a deer park.

It has been remarked, that the Dock is never found to prosper in bad or unfertile soils. Dr. KEITH, in his *General View of the Agriculture of Aberdeenshire*, at p. 443, relates an Anecdote of a man who, some years ago, took a small farm in the division of Marr, Aberdeenshire. When the man entered to it, at the usual time, viz. Whitsunday, he found that there was not a weed of the *Dock* kind on the farm. At Candlemas, or nine months after, he called on the proprietor, and apprized him that he should leave it. The Gentleman asked him, "Why he gave up a farm before he saw what crop he could raise on it?" He replied, "Sir, there was not a Dockan" (the provincial name for Dock) "on it at Whitsunday. I brought Dockans from different places, and have planted them, but they have not answered at all; and I know that what will not grow Dockans cannot grow corn." This self-taught botanist, observes Dr. KEITH, was perfectly right; for the farm was really a bad one.

In the north of England Docks are sometimes boiled as food for pigs; and the broad leaves of this species were formerly much used for the wrapping up of butter, and hence the plant was called *Butter-dock.*—A parasitic fungus, *Æcidium rubellum*, Pers., one of the most beautiful of the genus, is occasionally found in perfection on the leaves of this, and 2 or 3 other species in the neighbourhood of the Cherwell and the Isis, near Oxford. I have also found it, very fine, on *Rumex ascetosa*, on the south side of Shotover Hill. This beautiful parasite is well represented in the late Mr. PURTON's excellent "Midland Flora," v. iii. t. 26.



Seseli Libanotis. Mountain Meadow Saxifrage. ♃

Ruſsell Del. Pub.d by W. Baxter, Botanic Garden, Oxford 1842. Mathews Sc.

SE'SELI[*].

Linnean Class and Order. PENTA'NDRIA[†], DIGY'NIA.

Natural Order. UMBELLI'FERÆ[‡], Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.--Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACÆ; subty. ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 774.

GEN. CHAR. *Flowers* imperfectly separated, regular, the innermost more or less abortive. *Calyx* (see figs. 2 & 5.) superior, of 5 spreading, ascending, spear-shaped, pointed, permanent teeth. *Corolla* (see fig. 1.) of 5 nearly equal, inversely heart-shaped *petals* with a broad inflexed point (see fig. 3). *Filaments* (see fig. 1.) 5, thread-shaped, spreading, incurved, longer than the petals. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, furrowed, downy, blunt. *Styles* (see fig. 2.) 2, in the flower short, upright, each with a large, tumid, egg-shaped base (see fig. 4.); subsequently spreading as far as the calyx, or farther, finally reflexed, permanent (see fig. 5). *Stigmas* simple, bluntish. *Floral Receptacle* wanting. *Fruit* (see fig. 5.) oval or oblong, scarcely compressed, ribbed, clothed, more or less, with loosely spreading, shortish hairs, and crowned with the calyx and reflexed styles. *Carpels* with 5 prominent, corky ribs; the lateral of which form a margin, and are usually rather broader than the others. *Interstices* with a single *vitta* (see fig. 6). *Seed* almost half round. *Universal Involucrum* various; *partial one* of many leaves. *Flowers* white.

The *calyx* with 5 acute teeth; the oval or oblong *fruit*, crowned with the reflexed styles; and the *carpels* with 5 prominent, corky *ribs*, with single *vittæ* in the *interstices;* will distinguish this from other genera in the same class and order.

One species British.

SE'SELI LIBANO'TIS. Mountain Stone-parsley. Mountain Meadow-Saxifrage. Mountain Spignel.

SPEC. CHAR. Stem furrowed. Leaves bipinnate; leaflets deeply pinnatified, lower ones decussate; segments spear-shaped. Fruit egg-oblong, villous.

Koch. Umb. p. 111.—Lindl. Syn. p. 119.—Hook. Brit. Fl. p. 121.—Irv. Lond. Fl. p. 299.—*Athamanta libanotis*, Linn. Sp. Pl. p. 351.; Fl. Suec. (2nd ed.) p. 87.—Engl. Bot. t. 138.—Jacq. Fl. Austr. v. iv. p. 48. t. 392.—Fl. Dan. t. 754.—Huds. Fl. Angl. (1st ed.) p. 100.—Willd. Sp. Pl. v. i. pt. II. p. 1400.—Sm. Fl. Brit. v. i. p. 304.; Engl. Fl. v. ii. p. 88.—With. 2nd ed. v. i. p. 283.; ibid. 7th ed. v. ii. p. 372.—Spreng. Spec. Umb. p. 37.—Relh. Fl. Cant. 1st ed. p. 113, with a plate; ibid. 3rd ed. p. 115, with a plate.—*Athamanta oreoselinum*, Huds. Fl.

Fig. 1. A Flower.—Fig. 2. Germen, Calyx, and Pistils.—Fig. 3. A Petal.—Fig. 4. Styles, showing their tumid bases.—Fig. 5. Fruit.—Fig. 6. Transverse section of a Fruit.—*All, more or less, magnified.*

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[*] From *scycelyos*, the Arabic name of an umbelliferous plant, but to what plant it was given is now unknown. DON.

[†] See fol. 48, note †.

[‡] See fol. 235, *a*.

Angl. (2nd ed.) p. 115.—With. (2nd ed.) v. i. p. 283. *Not of Linneus.—Libanotis vulgaris*, D C. Prod. v. iv. p. 150.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 312.—Macr. Man. Brit. Bot. p. 101.—*Libanotis montana*, Gray's Nat. Arr. p. 518.—*Libanotis daucoides*, Scop. Fl. Carn. Nº. 317.—*Apium petræum, sue montanum, album*, Bauh. Hist. v. iii. pt. II. p. 105, with a figure.—Ray's Syn. p. 218.—*Daucus montanus, pimpinellæ saxifragæ hircinæ folio, nostras, Dubriensis*, Plu. Almag. p. 129.; Phyt. t. 173. f. 1.

Localities.—In chalky pastures; very rate.—*Cambridgeshire;* Chalk-pit Close, Hinton; in some old chalk-pits, on the right and left hand side of the road leading from Hinton towards the road to Gogmagog Hills, and on the balks. Not now found on Gogmagog Hills: Relhan.—*Cumberland;* Keswick: Mr. Hutton, in B. G. Probably not found there now, as this locality is not noticed in Mr. Watson's *New Botanist's Guide.—Hertfordshire;* Between St. Alban's and Stoney-Stratford: Hudson.

Perennial.—Flowers in July and August.

Root tapering, somewhat woody, bearded at the top with the fibrous remains of the old leaf-stalks. *Stem* from 1 to 3 feet high, upright, firm, angular and deeply furrowed, solid, smooth, not much branched, leafy principally in the lower part. *Radical Leaves* stalked, twice or thrice pinnate; *leaflets* opposite, deeply and sharply cut, smooth; the lowermost crowded, and often crossing each other. *Stem-leaves* alternate, twice pinnate, with pinnatifid leaflets. *Petioles (leaf-stalks)* somewhat compressed, channelled between the leaflets, dilated at the base with a membranous border. *Umbels* terminal, on long, upright, furrowed stalks, convex, of many stout, angular, downy *general rays*, and still more numerous *partial ones*. *Universal* as well as *partial involucrums* of many strap-spear-shaped, taper-pointed, downy leaves. *Flowers* crowded, white or reddish. *Germen* and *Styles* sometimes of a purplish colour. *Fruit* oblong egg-shaped, hairy.—The *terminal umbel* is sometimes proliferous, with the rays two inches long.

This is one of the most rare of our native plants, having been found only in the few stations recorded above. In Sweden, Denmark, Germany, Switzerland, Austria, Carniola, and the South of France, it is more frequent. The root is bitterish and pungent.

For the specimen from which the drawing for the accompanying plate was made, I am indebted to my kind friend Mr. E. Jenner, of Lewes, Sussex; a most excellent and indefatigable British Botanist.

Oh! were I spiritual as the wafting wind
    Which breathes its sighing music through the wood,
    Sports with the dancing leaves, and crisps the flood;
Then would I glide away from cares which bind
Down unto haunts that taint the healthful mind.
    And I would sport with many a bloom and bud,
    Happiest, the farthest from the neighbourhood,
And from the crimes and miseries of mankind.
    Then would I waft me to the cowslip's bell;
And to the wild-rose should my voyage be:
    Unto the lily, vestal of the dell;
Or daisy, the pet-child of poesy;
    Or be, beside some mossy forest-well,
Companion to the wood-anemone.

R. Howitt.

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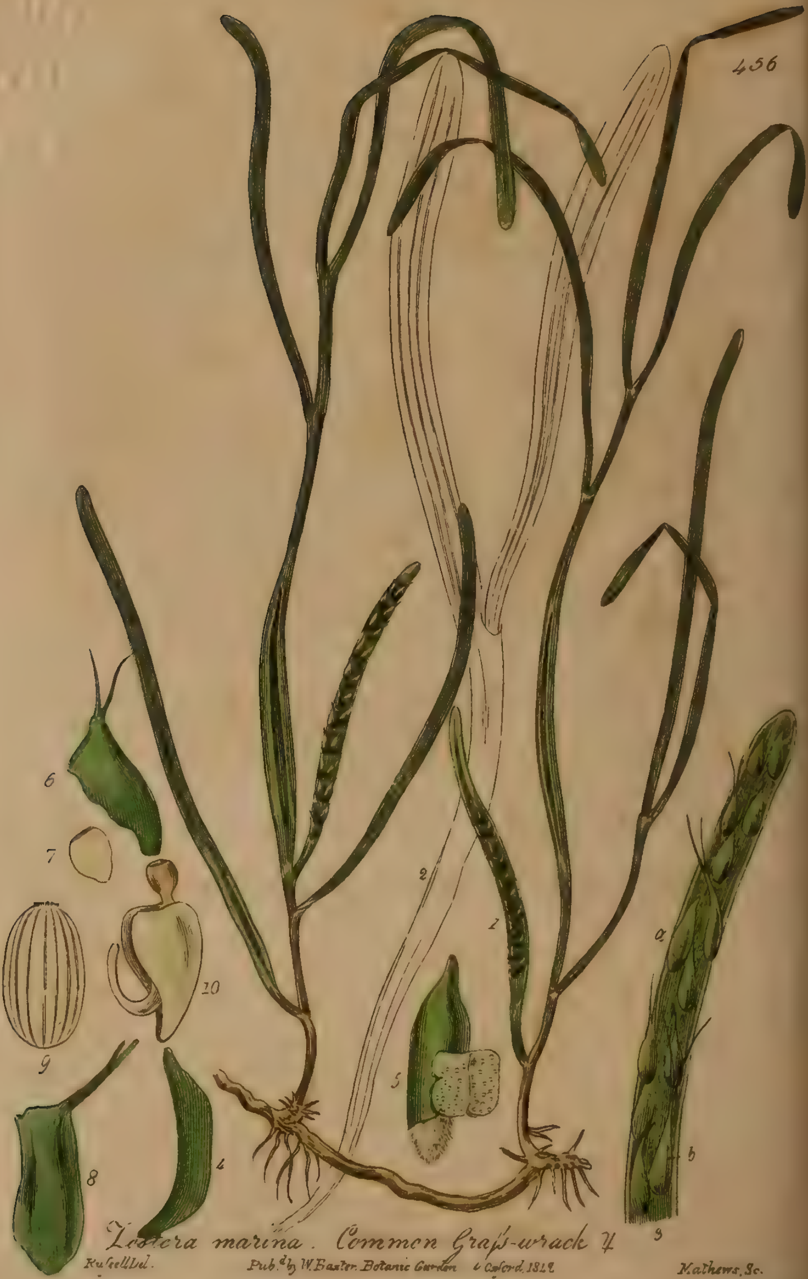
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Zostera marina. Common Graſs-wrack ♃

Russell Del. Pub.d by W. Baxter. Botanic Garden Oxford. 1842. Mathews. Sc.

ZOSTE′RA [*].

Linnean Class and Order. MONŒ′CIA [†], MONA′NDRIA [‡].

Natural Order. FLUVIA′LES [§], *Vent.*—Lindl. Syn. p. 248.; Introd. to Nat. Syst. of Bot. p. 289.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 264—NAIADES, Juss. Gen. Pl. p. 18.—Sm. Gram. of Bot. p. 66.—Hook. Brit. Fl. (4th ed.) p. 423.—NAJADEÆ, Rich. by Macgilliv. p. 387.—JUNCALES; sect. NAYADINÆ; type, NAYADACEÆ; Burn. Outl. of Bot. v. i. pp. 403 and 413.—INUNDATÆ, *Linn.*

GEN. CHAR. *Flowers* monœcious; both *sterile* and *fertile ones* arranged in two rows upon one side of a common *spadix* (see fig. 3). *Spatha* oblong, formed of the base of a leaf, splitting lengthwise. *Sterile Flower* (see fig. 3, *a.* & fig. 4). *Calyx* none. *Corolla* none. *Anther* (see fig. 3, *a.* and figs. 4 & 5.) cylindrical, tapering at each end, sessile, of 1 cell. *Pollen* mixed with branched fibres (see fig. 5). *Fertile Flower* (see fig. 3, *b.* and fig. 6). *Calyx* none. *Corolla* none. *Germen* (see fig. 3, *b.* & fig. 6.) egg-shaped, compressed, 2-edged. *Style* (see fig. 3, *b.* & fig. 6.) 1, terminal, cylindrical, curved outwards. *Stigmas* 2, thread-shaped, pointed, curved. *Fruit* (see fig. 8.) a bladder-like *drupe* or *utricle*), cylindrical, pointed, somewhat juicy, 1-celled, without valves, 1-seeded. *Seed* (see fig. 9.) oval, striated. *Embryo* (see fig. 10.) central, cylindrical, curved. *Radicle* inferior, (that is, opposite to the scar of the seed).

Distinguished from other genera in the same class and order, by the two kinds of flowers being inserted, in two rows, upon one side of a common *spadix*, and both destitute of calyx and corolla; by the leaf-like *spatha*; and by the sessile *anther*.

One species British.

ZOSTE′RA MARI′NA. Sea Grass-wrack. Common Grass-wrack.

SPEC. CHAR. Stem roundish. Leaves strap-shaped, entire, somewhat 3-nerved.

Engl. Bot. t. 467.—Hook. Fl. Lond. t. 35.—Fl. Dan. t. 15.—Linn. Sp. Pl. p. 1374.; It. W. Goth. p. 166. t. 4.—Huds. Fl. Angl. (2nd ed.) p. 395.—Willd. Sp. Pl. v. iv. pt. I. p. 179.—Sm. Fl. Brit. v. i. p. 7.; Engl. Fl. v. i. p. 5.—With. (7th edit.) v. iii. p. 668.—Gray's Nat. Arr. v. ii. p. 37.—Lindl. Syn. p. 251.—Hook. Brit. Fl. p. 385.—Macr. Man. Brit. Bot. p. 224.—Lightf. Fl. Scot. v. i. p. 530.—Thomp. Pl. of Berw, p. 1.—Davies' Welsh Bot. p. 2.—Hook. Fl. Scot. p. 259.—Grev. Fl. Edin. p. 188.—Burn. Outl. of Bot. v. i. p. 414.—Fl. Devon. pp. 146 and 113.—Johnst. Fl. of Berw. v. i. p. 2.—Winch's Fl. of Northumberl. and Durh. p. 58.—Bab. Prim. Fl. Sarn. p. 101.—Irv. Lond. Fl. p. 85.—Cow. Fl. Guide, p. 54.—Baines' Fl. of Yorksh. p. 97.—Mack. Catal. Pl. of Irel. p. 78.; Fl. Hibern. p. 267.—*Alga*, Ray's Syn. pp. 52 & 53; the whole genus.

Fig. 1. Plant of its usual size.—Fig. 2. Larger variety.—Fig. 3. Part of a Spadix, with the Flowers.—Fig. 4. A perfect Anther.—Fig. 5. One laid open to show the contents.—Fig. 6. Germen.—Fig. 7. Young Seed taken from it.—Fig. 8. Seed-vessel.—Fig. 9. Ripe Seed.—Fig. 10—Embryo deprived of its covering.—All, except figs. 1 & 2, *magnified.*—From Sir J. W. HOOKER's beautiful plate in *Flora Londinensis.*

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[*] From *zoster*, Gr. a *girdle*, or *ribbon*; which the leaves somewhat resemble.

[†] See fol. 83, note †.

[‡] See fol. 49, note †.

[§] See fol. 350, *a.*

Localities.—On the sea-shores, almost everywhere, and in adjacent salt-water ditches.

Perennial.—Flowers through the Summer.

Root fibrous. *Stem* from 2 to 3 feet long, floating under water, round, smooth, decumbent at the base, jointed, the joints throwing out roots, upper part upright, leafy. *Leaves* alternate, from 4 to 8 inches or more long, and 2 or 3 lines wide, strap-shaped, bright green, grass-like, floating, smooth, entire, blunt at the extremity, much sheathing at the base, and throughout the whole length more or less distinctly 3-nerved, the nerves connected by transverse veins. *Flowers* quite destitute of both calyx and corolla, and inserted in 2 longitudinal lines on the superior surface of a long, strap-shaped, somewhat succulent, cellulose *spadix*, arising from a sheathing portion of a leaf, which thus forms the *spatha*. *Pistils* and *Anthers* alternate, generally 2 *anthers*, and then 1 pistil; both egg-shaped, or oblong-egg-shaped (see fig. 3, *a* & *b*. and figs. 4, 5, and 6.), the *germen* tipped with a 2-parted, long, filiform *style*. Both are green. *Anther* bursting irregularly, and discharging an exceedingly minute *pollen*, mixed with pellucid, branched fibres. *Fruit* (fig. 8.) cylindrical, rather succose, smooth, green, at length between membranaceous and horny, when dry striated, often ending in a beak by means of a portion of the style and stigmas. See Hooker's *Fl. Lond.*

Whole plant variable in size. The large variety, fig. 2. is found on the coast of Scotland, but never, I believe, in flower. Sir J. E. Smith says, "*Zostera* is easiest understood, as a simple unilateral spike of naked flowers disposed in two ranks."

It is thrown on the shore by the tide, in great plenty, and mounds or walls are built with it to oppose the encroachment of the sea. Exposure to the weather bleaches it white. Buildings are thatched with the green leaves, which will endure upwards of a century. It is used by the inhabitants of Gothland, in Sweden, as a manure, and also for stuffing beds; and of late it has been imported in large quantities from the Continent, and is now prepared in this country for stuffing mattresses, and for the other purposes to which horse-hair is in general applied. It is also used for packing glass-bottles, and other brittle ware. Pallas tells us, that in Russia it is found among Pottery in old tombs.—Horses and swine eat it; cows are not fond of it.

The following lines were suggested by the peculiar beauty and curious formation of this plant.

"More near to the orb of her ardent devotion,
Zostera ascends from the deep coral cave,
(Where no sun-beams enliven the gloom of the ocean,)
To float in the splendour that lights up the wave.

How sweetly she blooms on the calm swelling billow,
While the sun's parting glory illumines the west:
And though fitful and wild is that treacherous pillow,
Its rockings but waft to an haven of rest.

So grant that our thoughts, on the wings of devotion,
May rise from the depth of affliction to Thee;
O, Thou! who canst silence the waves of the ocean,
The dark rolling billows of life's stormy sea!

Then weep not, poor pilgrim, though startled from slumber,
And vanish'd the dreams that once render'd thee blest;
Peace divine, a sure pilot, o'er waves without number,
Will guide thy frail bark to an haven of rest."

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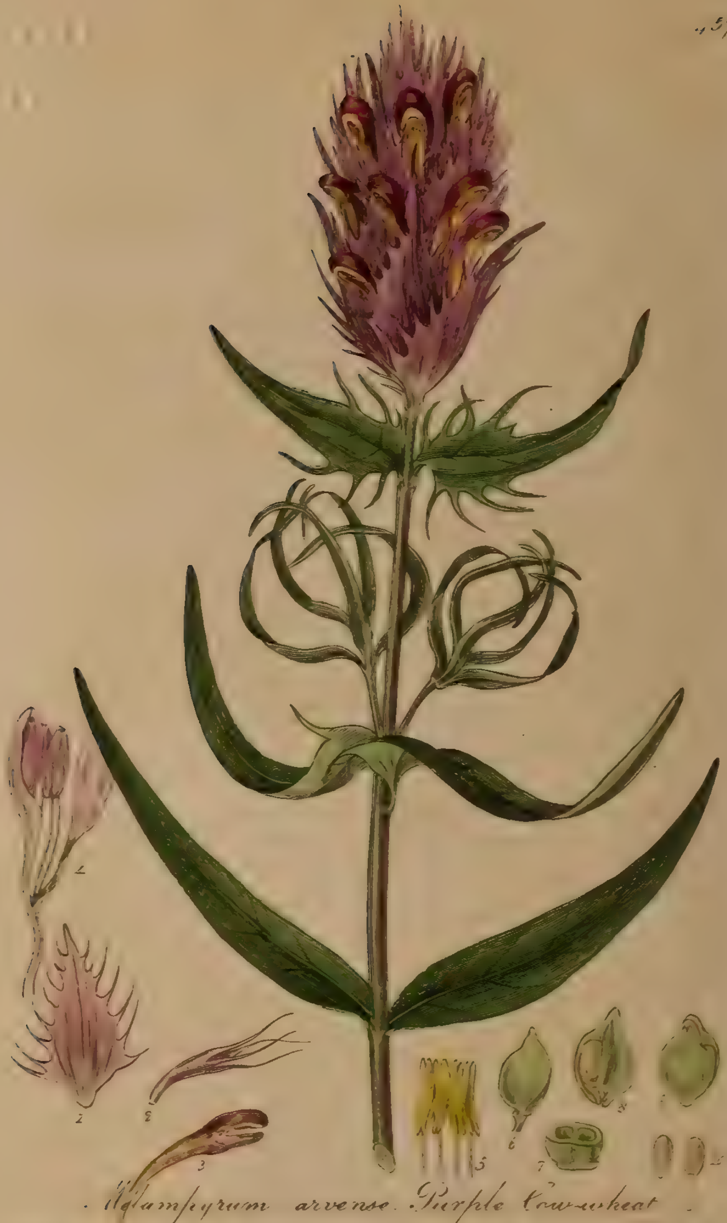

Melampyrum arvense. Purple Cow-wheat.

[illegible] Pub.d by W Baxter Botanic Garden Oxford. 3.2 [illegible]

MELAMPY'RUM *.

Linnean Class and Order. DIDYNA'MIA †, ANGIOSPER'MIA ‡.

Natural Order. MELAMPYRA'CEÆ §, *Richard.*—Lindl. Syn. p. 194.—Mack. Fl. Hibern. p. 207.—RHINANTHACEÆ, Dec. Fl. Fr. v. iii. p. 454.—Lindl. Introduct. to Nat. Syst. of Bot. p. 230.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 618.—SCROPHULA'RINÆ, Rich. by Macgilliv. p. 434.—Loud. Hort. Brit. p. 528.—Hook. Brit. Fl. (4th ed.) p. 414.—PEDICULARES, Juss. Gen. Pl. p. 99.—Sm. Gram. of Bot. p. 96.—SYRINGALES; subord. PRIMULOSÆ; sect. MENTHINÆ; type, SCROPHULARIA'CEÆ: Burn. Outl. of Bot. v. ii. pp. 900, 958, and 978.—PERSONATÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 2.) inferior, of 1 sepal, tubular, permanent; the border in 4 deep, straight, unequal, rather long and narrow segments. *Corolla* (fig. 3.) of 1 petal, ringent, moderately gaping; tube oblong, curved; throat a little dilated, compressed; upper lip vaulted, compressed, notched, with a narrow, reflexed border at each side; lower lip 3-cleft. *Filaments* (see figs. 4 & 5.) 4, from the throat of the corolla, awl-shaped, shortish, incurved, meeting under the upper lip. *Anthers* converging, oblong, each of 2 oblong pointed lobes. *Germen* egg-shaped, pointed. *Style* thread-shaped, inclosed in the corolla. *Stigma* deflexed, blunt. *Capsule* (fig. 6.) oblong, oblique, 2-celled, 2-valved, opening on one side. *Cells* 1-seeded. *Seeds* (fig. 10.) large, somewhat egg-shaped, attached, by a short, thick, spongy stalk, to the base of the partitions.

The tubular, 4-cleft *calyx;* the *corolla* with the upper lip laterally compressed, and turned back at the margin, and the lower 3-cleft; the oblong, oblique, compressed, *capsule*, of 2, 1-seeded, cells; and the large *seeds*, gibbous at the base; will distinguish this from other genera in the same class and order.

Four species British.

MELAMPY'RUM ARVENSE. Corn-field Cow-wheat. Purple Cow-wheat. Blue Cow-wheat. Poverty-weed.

SPEC. CHAR. Spikes conical, loose. Bracteas egg-shaped, pinnatifid, with setaceous segments. Calyx-teeth much longer than the tube. Corolla closed.

Engl. Bot. t. 53.—Hook. Fl. Lond. t. 63.—Fl. Dan. t. 911—Linn. Sp. Pl. p. 842.—Huds. Fl. Angl. (2nd ed.) p. 270.—Willd. Sp. Pl. v. iii. pt. I. p. 198.—Sm. Fl. Brit. v. ii. p. 652.; Engl. Fl. v. iii. p. 124.—With. (7th ed.) v. iii. p. 729.—Gray's Nat. Arr. v. ii. p. 312.—Lindl. Syn. p. 195.—Hook. Brit. Fl. p. 284.—Macr. Man. Brit. Bot. p. 174.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 626.—Perry's Pl. Varvic. Sel. p. 51.—Irv. Lond. Fl. p. 260.—*Melampyrum purpurascente comâ*, Bauh. Pin. p. 234.—Dill. in Ray's Syn. p. *286.—Blackst. Sp. Bot. p. 51.—*Melampyrum multis, sive Triticum vaccinum*, Bauh. Hist. v. iii. pt. II. p. 439, with a figure.—*M. cæruleum*, Johnson's Gerarde, p. 90.

Fig. 1. A Bractea.—Fig. 2. Calyx.—Fig. 3. Corolla.—Fig. 4. Same opened.—Fig. 5. Stamens.—Fig. 6. Capsule.—Fig. 7. Section of ditto.—Fig. 8. Same with one of the valves removed.—Fig. 9. Capsule with valves opening.—Fig. 10. Seeds.—Fig. 4 & 5, *magnified.*

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[*] From *melas*, Gr. *bleak;* and *pyros*, Gr. *wheat;* from the seeds resembling grains of wheat.

[†] See fol. 31, note †.

[‡] See fol. 72, note ‡.

[§] Differs from *Scrophularineæ* in the capsule being 2, not many, seeded.

Localities.—In corn-fields, and on dry gravelly banks; rare.—*Cheshire*; On a hill at Horsley Bath: near Beeston Castle: Mr. Vernon, in ***Blackst. Sp. Bot.***—*Dorset*; In Bere Field; observed for two years, but afterwards lost: Dr. Pulteney.—*Gloucestersh.* Corn-fields near Gloucester: G. S. Wintle, in N. B. G.—***Hants***; In corn-fields between Steephill and St. Lawrence, where, as well as on steep banks, and even in woods, but particularly among corn, it grows in far too great a degree of abundance, and is gradually encroaching on the wheat-fields all along the Undercliff from Niton even to Bonchurch, Isle of Wight: Dr. W. A. Bromfield.—***Norfolk***; In the corn on the right hand just before you come to Lycham: Mr J. Sherard, in ***Ray's Syn.*** In Wesenham corn-fields: Mr. Hill, in ***Black. Sp. Bot.***—Once found in Barton Bendish: Rev. R. Forby. In the common field at Sporle, especially among wheat: Rev. J. S. Watts. At Costesey and Bixley, near Norwich: Mr. Pitchford. At Swardeston and Keswick, near Norwich: Mr. Crow.—***Warwicksh.*** Packington: Countess of Aylesford.

Annual.—Flowers in July.

Root tapering, fibrous. *Stem* upright, from 6 inches to a foot or more high, bluntly 4-cornered, much branched, often purplish, clothed with very short, deflexed hairs, leafy. *Leaves* opposite, nearly sessile, spear-shaped, pointed, one or two of the upper pairs usually with several long, spear-shaped, pointed teeth, at the base; all rough with very short, bristly hairs. *Spikes* conical, gradually lengthening out, many-flowered. *Bracteas* (see fig. 1.) loosely spreading, deeply pectinated or pinnatifid; the upper ones entirely, and the lower ones partially, coloured of a delicate purplish rose-colour. *Flowers* large, about as long as the bracteas. Segments of the *calyx* very long and slender, sharp-pointed, coloured like the bracteas, and rough with short blunt hairs. *Corolla* (fig. 3.) a little longer than the segments of the calyx, rough with short hairs; tube dilated at the base and throat, narrow and curved in the middle; lips closed, upper one very obtuse, and beautifully fringed at the margin; lower ones nearly flat, channelled on the upper side, with a prominent rib on the lower, very slightly 3-cleft; variegated with yellow, rose-colour, and purple. *Filaments* 4, fringed with hairs. *Anthers* incumbent, combined. *Germen* egg-shaped. *Style* slender, longer than the stamens, curved at the summit. *Stigma* small, blunt. *Seeds* large, resembling grains of wheat, 2 in each cell, though often by abortion only one.

It is a beautiful plant, and would be an ornament to the flower-garden, was it not—like other species of the genus—very shy of cultivation. It is a bad weed to the farmer, especially when it abounds among wheat. Dr. Bromfield informs me, that "the value of the wheat on certain farms, in land behind St. Lawrance," in the Isle of Wight, "is greatly lowered from the admixture of the seeds, which cannot be separated from the grain by winnowing, the specific gravity of both being nearly the same; these seeds impart a bluish colour to the flour, and give it, when made into bread, a hot and unpleasant flavour, which must be any thing but wholesome to those who make use of it. The plant is well known in the neighbourhood as the *Poverty-weed*, and various traditions are afloat as to the manner of its introduction to this island, which however is not of very recent date, the species having existed in some of its present stations for at least 40 years, and is by some supposed to have come over from Jersey, where, however, it is not known at present as indigenous, or even naturalized. Others conjecture that it may have been imported from Spain, but these suppositions are entirely gratuitous, appearing to have no foundation in fact. The probability is, we are indebted for this unwelcome, though splendid addition to our flora, [of the Isle of Wight] to an importation of seed-wheat from Norfolk, or some other maritime county, where, as in this island, it infests only such corn lands as lie over chalk, or contain a large proportion of calcareous earth."

Cows and goats are said to eat this plant; sheep to refuse it.

For the specimen figured, as well as for the above interesting information, I am indebted to the kindness of Dr. W. A. Bromfield, of Ryde, in the Isle of Wight, who is now preparing a Flora of that Island.

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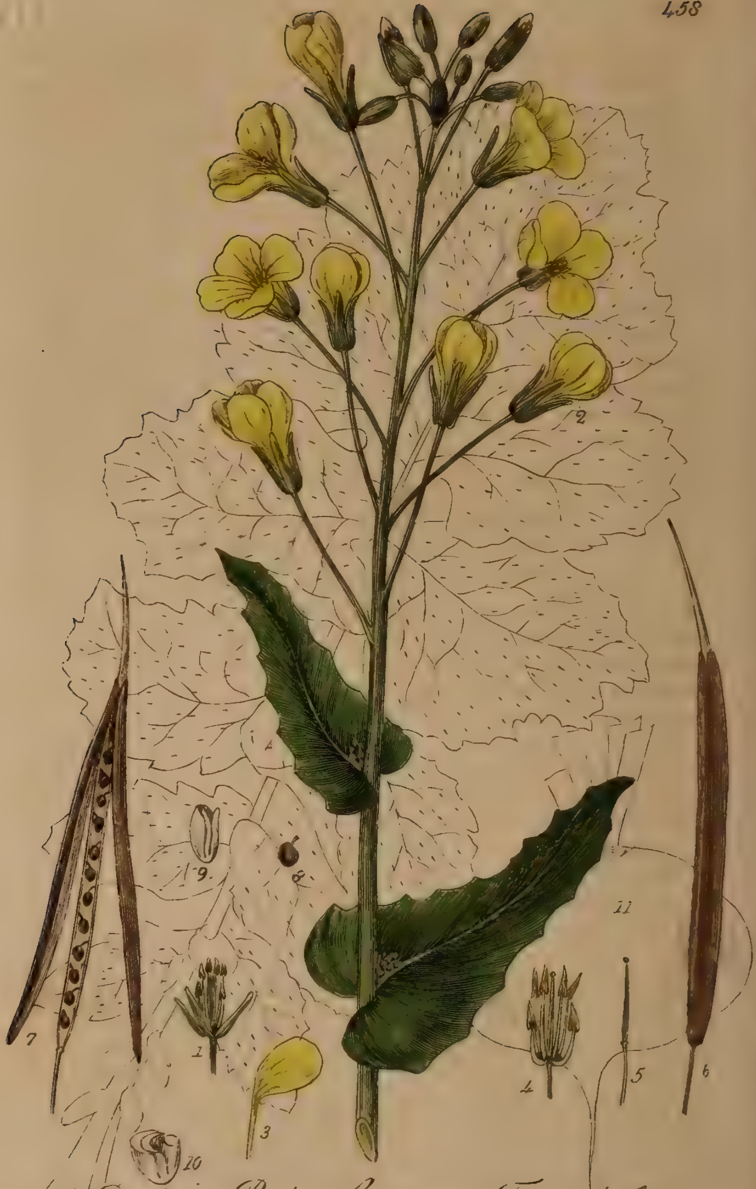
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Braſsica Rapa. Common Turnep. ♂

Ruſsell Del. Pub.d by W. Baxter. Botanic Garden. Oxford. 1840 Mathews Sc.

BRA'SSICA [*].

Linnean Class and Order. TETRADYNA'MIA[†], SILIQUO'SA[‡].

Natural Order. CRUCI'FERÆ[§], Juss. Gen. Pl. p. 237.—Sm. Gram. of Bot. p. 138.; Engl. Fl. v. iii. p. 153.—Rich. by Macgilliv. p. 498.—CRUCIFERÆ: subord. ORTHOPLO'CEÆ[||]; tribe, BRASSICEÆ, Lindl. Syn. pp. 20 & 32; Introd. to Nat. Syst. of Bot. pp. 11 to 18.—Loud. Hort Brit, pp. 498 & 499.; Mag. Nat. Hist. v. i pp. 143 & 240.—Don's Gen. Syst. of Gard. and Bot. v. i. pp. 146 and 150 —Mack. Fl. Hibern. p. 16 & 27.—Hook. Brit. Fl. (4th ed.) pp. 397 & 398.—ROSALES; subord. RHŒADOSÆ; sect. RHÆADINÆ; type, BRASSICACEÆ; subtype, RAPHANIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 847, 853, & 860.—SILIQUOSÆ, *Linn.*

GEN. CHAR. *Calyx* (see figs. 1 & 2.) inferior, equally protuberant at the base, of 4 oblong, concave sepals, converging in their lower part, spreading in the upper, deciduous. *Corolla* (see fig. 2.) of 4 inversely egg-shaped, spreading, undivided petals, with upright, channelled claws (see fig. 3). *Filaments* (see figs. 1 & 4.) 6, 2 shorter than the other 4, awl-shaped, simple, upright. *Anthers* oblong, nearly upright, a little recurved. *Glands* (see fig. 4.) 4; 2 at the inside of the shorter filaments, 2 at the outside of the longer. *Germen* (see fig. 5.) cylindrical, the length of the longest stamens. *Style* tapering, making a beak to the pod. *Stigma* capitate, entire. *Pod* (see fig. 6.) nearly cylindrical, beaked, of 2 concave valves, and 2 longitudinal cells, besides one in the beak, which is often barren (see fig. 7). *Seeds* (see figs. 7 & 8.) in a single row, nearly globular, with one or more occasionally in the beak. *Cotyledons* (see figs. 9 & 10.) folded together, incumbent, their double edges meeting the radicle (o > >).

The closed *calyx;* the nearly cylindrical, 2-valved *pod*, crowned with a barren, or single-seeded, beak; and the globose *seeds* in a single row; will distinguish this from other genera, with folded, incumbent *cotyledons*, in the same class and order.

Six species British. See *Hook. Brit. Fl.* (4th ed.) p. 256.

BRA'SSICA RAPA. Common Turnip. Rape. Knolles.

SPEC. CHAR. Root stem-like, fleshy, orbicular, depressed. Root-leaves lyrate, rough with bristly hairs; those of the stem smooth; the uppermost entire.

Engl. Bot. t. 2176.—Mart. Fl. Rust. t. 49 & 50.—Linn. Sp. Pl. p. 931.—Huds. Fl. Angl. (2nd ed.) p. 286 —Willd. Sp. Pl. v. iii. pt. I. p. 548.—Sm. Fl. Brit. v. ii. p. 719.; Engl. Fl. v. iii. p. 217.—With. (7th ed.) v. iii. p. 783.—Lindl. Syn. p. 32.—Hook. Brit. Fl. p. 308.—Dec. Prod. v. i. p. 214.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 242.—Macr. Man. Brit. Bot. p. 21.—Bryant's Fl. Diætetica, pp. 26

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A separate Petal.—Fig. 4. Stamens and Pistil.—Fig. 5. Germen.—Fig. 6. Pod.—Fig. 7. Same with the valves separated.—Fig. 8. Seed.—Fig. 9. The folded incumbent Cotyledons.—Fig. 10. Transverse section of the same.—Figs. 9 & 10, *magnified.*

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[*] From the Celtic *Bresic*, a *cabbage*, according to THEIS. Dr. WITHERING says it is probably derived from *brasso*, Gr. to *boil;* it being commonly so prepared as an esculent vegetable.

[†] See fol. 38, n. †.

[‡] See fol. 62, n. ‡.

[§] See fol. 38, *a*.

[||] See fol. 336, n. ||.

and 84.—Loud. Encyclop. of Gard. (new ed. 1835.) p. 833. paragr. 4099.—Sibth. Fl. Oxon. p. 203.—Abbot's Fl. Bedf. p. 145.—Davies' Welsh Bot. 65.—Purt. Midl. Fl. v. i. p. 315.—Relh. Fl. Cant. (3rd ed.) p. 272.—Hook. Fl. Scot. p. 203.—Grev. Fl. Edin. p. 146.—Fl. Devon. pp. 113 & 190.—Johnst. Fl. Berw. v. i. p 147.—Winch's Fl. of Northumb. and Durh. p. 45.—Baxter's Lib. of Agricul. and Hort. Knowl. (2nd ed.) p. 589.—Walker's Fl. of Oxf. p. 194.—Dick. Fl. Abred. p. 46.—Bab. Prim. Fl. Sarn. p. 8.—Irv. Lond. Fl. p. 165.—Cow. Fl. Guide, p. 24.—Baines' Fl. Yorksh. p. 14.—Beesley's Hist. of Banb. p. 576.—Mack. Catal. of Pl. of Irel. p. 62.; Fl. Hibern. p. 28.—*Brassica sphærorhiza*, Gray's Nat. Arr. v. i. p. 683.—*Rapa sativa rotunda*, Bauh. Pin. p. 89—Ray's Syn. p. 294.—*Rapum majus*, Johns. Gerarde, p. 232.—*Round Turnep.* Petiv. H. Brit. t. 45. f. 8.

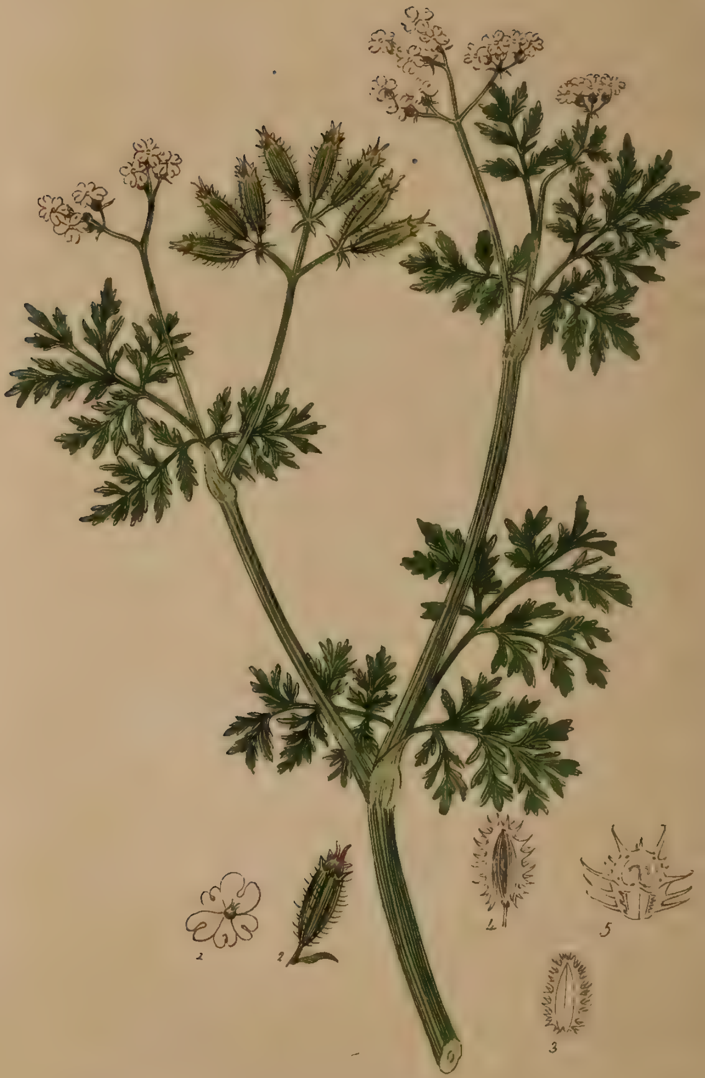
LOCALITIES.—In cultivated fields and their borders, and in waste places; scarcely wild.

Biennial.—Flowers in April.

Root orbicular (see fig. 11.) mostly depressed, in one variety oblong, always succulent, white, or tinged with purple, varying greatly in size, according to the soil in which it grows; tapering and fibrous at the base. *Stem* from 1 to 3 feet high, upright, branched, leafy, cylindrical, smooth. *Root-leaves* abundant the first season, withering as the stem arises, petiolate, spreading, large, lyrate, jagged, deep green, not glaucous, veiny, rough with small sharp bristly hairs; the terminal lobe large, roundish; all widely toothed. *Stem-leaves*, lower ones more simple, smoother, clasping at the base; upper ones small, quite entire, glaucous, smooth. *Flowers yellow*, numerous, in loose, corymbose tufs. *Calyx* spreading considerably in the upper part, though not at the base. *Petals* roundish, inversely egg-shaped, with upright, channelled claws. *Pod (siliquæ)* nearly upright, cylindrical, veiny, smooth, with a tapering barren beak (see fig. 6). *Seeds* globose, of a reddish-brown colour.

BRYANT observes, in his *Flora Diætetica*, p 26, that "no plant exhibits a more striking instance of the benefits of cultivation than this, for in its wild state it is worth little to man or beast; but under the management of the husbandman it not only affords food for the human species, but becomes a most advantageous crop to the cultivator, by furnishing the principal winter food for his cattle."—Before the introduction of potatoes, turnips (in a cultivated state) were of great consequence to the poor of this island. In Wales, a few years since, they formed a considerable portion of the food of the lower classes; and the use of the root, boiled and mashed as a dish, in broths, soups, and stews, or entire, is familiar over all Europe. The juice of the root, well fermented, affords by distillation an ardent spirit, and may be made into an inferior sort of cyder. The rind is acrimoneous, This root is also much used in decorating tongues, hams, stewed beef, &c., being cut into roses, and other devices. The top shoots from such as have stood the winter, are gathered whilst tender, and dressed as spring greens or spinach, and are called *Turnip-tops.* The seed is also sometimes sown as small salading. But the greatest use of Turnips is in feeding oxen, and more especially sheep, in winter. Turnips were used by the ancients to recover frozen or benumbed feet, being first boiled in water, and then applied as a fomentation. The root, pounded in a mortar with salt, was also esteemed a remedy for all diseases of the feet, such as corns, swellings from cold, &c. GUILLIM says Turnips were used in armorial bearings, to represent a person of good disposition, who relieved the poor.

For an account of the most approved methods of cultivating this very useful vegetable, both in the garden and in the field, see DON'S *Gen. Syst. of Gard. and Bot.*; LOUDON'S *Encycl. of Gard.*; MARTYN'S *Mill. Gard. Dict.*; and **BAXTER'S *Lib. of Agricul. and Horticul. Knowledge.***



Caucalis daucoides. Small Bur-Parsley. ⊙

Ruſsell, Del. Pub^d by W. Baxter Botanic Garden Oxford 1840. Mathews S.

CAU'CALIS *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. F. Hibern. p. 113.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, CAUCALIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, & 781.

GEN. CHAR. *Flowers* imperfectly separated, irregular; the outermost fertile. *Calyx* (see fig. 2.) superior, of 5 broad, acute, unequal, permanent teeth. *Corolla* (fig. 1.) of 5 more or less unequal, inversely heart-shaped petals, with a strongly inflexed point, the lobes of each almost equal. *Filaments* awl-shaped, shorter than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) inferior, oblong, bristly. *Floral Receptacle* obsolete. *Styles* (see fig. 2.) awl-shaped, slightly spreading, much shorter than the corolla, tumid, and somewhat pyramidal at the base, permanent. *Stigmas* blunt, oblique, *Fruit* (see figs. 2 & 4.) elliptic-oblong, slightly laterally compressed, tumid. *Carpels* (see figs. 3 & 5.) with the 5 primary ridges filiform, bristly, or with little prickles; of these the 3 middle ones are dorsal, the 2 lateral on the inner face; the 4 secondary ridges more prominent, armed with prickles, in one or two rows. *Channels (interstitia)* under the second ridges with single *vittæ* (see fig. 5). *Seed* involute, or inflexed at the edge. *Involucrum* many-leaved. *Flowers* white or pink.

The 5-toothed *calyx;* the slightly laterally compressed, beakless *fruit;* the *carpels* with 5 primary bristly ridges, of which the 3 middle ones are dorsal, and the 2 lateral ones on the inner face (or plane of the commissure); and the secondary ridges with hooked prickles, and single vittæ; will distinguish this from other genera in the same class and order.

Two species British.

CAU'CALIS DAUCOI'DES. Carrot-like Hen's-foot. Small Bur-parsley.

SPEC. CHAR. Leaves twice or thrice pinnatifid; segments short. Umbels of 3 rays. Involucrum none. Involucels 3-leaved. Umbellules ripening about 3 fruits.

Engl. Bot. t. 197.—Jacq. Fl. Aust. v. ii. p. 37. t. 157.—Linn. Syst. Nat. 12th ed. v. ii. p. 205.; 14th ed. p. 276; Mant. p. 351.—Huds. Fl. Angl. (2nd ed.) p. 112.—Willd Sp. Pl. v. i. pt. II. p. 1384.—Sm. Fl. Brit. v. i. p. 296.; Engl. Fl. v. ii. p. 41.—With. (7th ed.) v. ii. p. 365.—Gray's Nat. Arr. v ii. p. 500.—Lindl. Syn. p. 114.—Hook. Brit. Fl. p. 115.—Dec. Prod. v. iv. p. 216.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 360.—Macr. Man. Brit. Bot., p. 104.—Sibth. Fl. Oxon. p. 92.—Abbot's Fl. Bedf. p. 58.—Purt. Midl. Fl. v. i. p. 146.—Relh. Fl. Cant. (3rd ed.) p. 112.—Winch's Fl. of Northumb. and Durh. p. 18.—Walker's Fl. of

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Fig. 1. A separate Flower.—Fig. 2. Germen and Pistils.—Fig. 3. A Carpel.—Fig. 4. A Fruit.—Fig. 5. Transverse section of a Carpel.—Figs. 1 & 5, *magnified.*

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* A name used by HIPPOCRATES and THEOPHRASTES for an umbelliferous plant. DON.

† See fol. 48, note †.

‡ See fol. 235, *a.*

Oxf. p. 75.—Perry's Pl. Varvic. Sel. p. 25.—Bab. Fl. Bath. pp. 19 and 79.; Prim. Fl. Sarn. p. 46.—Irv. Lond. Fl. p. 233.—Baines' Fl. of Yorksh. p. 44.—*Caucalis leptophylla*, Huds. Fl. Angl. (1st ed.) p. 99; not of Linnæus.—*Caucalis tenuifolia, flosculis subrubentibus*, Ray's Syn. p. 219.—*Conium Royeni*, Linn. Sp. Pl. p. 350.—*Echinophora tertia leptophyllon purpurea*, Column. Ecphr. p. 96. t. 97. f. 2.

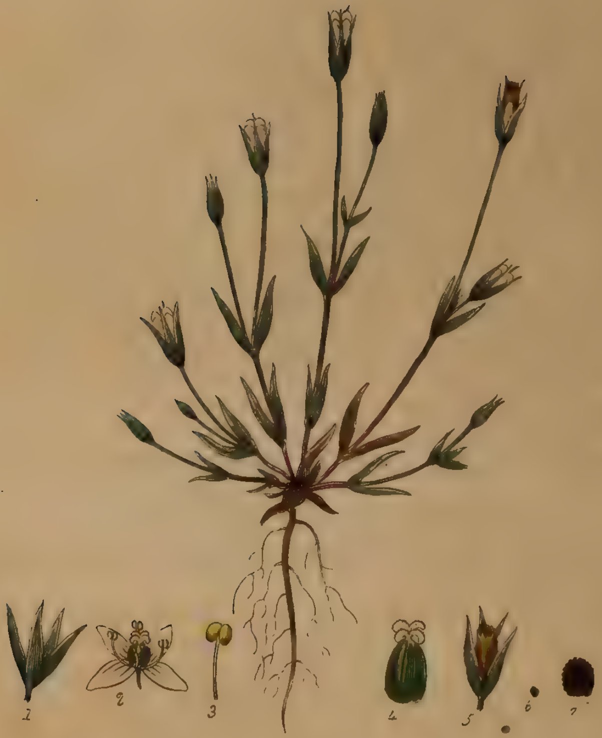
Localities.—In corn-fields, on a chalky soil.—*Oxfordsh.* Between Middleton Stony and Bucknel: Dr. Sibthorp.—*Berks;* Near Reading: Mr. Fardon.—*Beds;* Oakley West Field, discovered by Mr. James Payne, a discerning Herbalist of that village: Rev. C. Abbot.—*Cambridgesh.* Among the wheat, on the left-hand side of the road leading from Cambridge to Gogmagog Hills, between the second and third milestone; Kingston; Devil's Ditch; Anglesey: Rev. R. Relhan. Very scarce, having only been found, of late years, near Swaffham Prior and Burnwell: C. C. Babington, in N. B. G.—*Durham;* In fields on Fulwell Hills near Sunderland, its most northern locality. Fields near Whitburn: N. J. Winch, Esq. In corn-fields near Norton: J. Hogg, Esq.—*Kent;* About Dartford: Mr. Woods, jun.—*Lincolnsh*, Carlby, between Stamford and Bourn: Mr. Woodward.—*Norfolk;* Corn-fields at Marham: Mr. Crow.—*Northamptonsh.* Near a limestone-pit at Denshanger, copiously: *Hist.*—*Sometsetsh.* Corn-fields about Charlton Adam, Somerton: Dr. Gapper. Odd Down or Burnt-house Gate, in corn: Dr. Davies. Corn-fields on Kingsdown: Mr. C. E. Broome.—*Suffolk;* Great Saxham, near Bury: Sir T. G. Cullum. Newmarket: N. J. Winch, Esq.—*Surrey;* Among the corn by the side of the road from Banstead to Dorking: Martyn. Near Boxhill: Mr. J. Woods, jun. In corn-fields on the south side of the Chalk Downs about two miles west of Dorking, above Westcote-street: Mr. E. Jenner.—*Warwicksh.* Alne Hills in corn-fields: Rufford. Fields about Drayton Bushes: T. Purton, Esq.—*Yorksh.* Corn-fields near Malton, and Thorp Arch: Teesdale. Above Barton, and Appleton near Malton: Rev. Archdeacon Pierson. Near Ripon: Mr. Brunton. Ploughing fields near Thornborough Moor, between the villages of Thornborough and Tanfield: Rev. J. Dalton. Kippax; Roche Abbey; Knaresbro'; Hildenley Wood; and near Whitwell: Mr. Baines.

Annual.—Flowers in June.

Root small, tapering. *Stem* from 6 inches to a foot or 18 inches high, deeply furrowed, nearly smooth, except the joints, which are hairy. *Leaves* extremely elegant, on short membranous-edged foot-stalks; 3-cleft at the base, then thrice compounded, clothed more or less with very narrow, deep-green segments; nearly smooth on the upper surface, the lower with scattered, white, bristly hairs. *Umbel* of 3 or 4 stout, 4-cornered, spreading rays, without an involucrum, or with rarely a small solitary *bractea*. *Umbellules* of 2 or 4 fertile *flowers*, with several sterile ones. *Involucels* of from 3 to 5 spear-shaped, spreading leaves, not membranous. *Calyx* very obvious. *Petals* generally reddish, but slightly radiant (see fig. 1). *Fruit* large, oblong, very prickly, with long, whitish, hooked bristles, in distinct rows; rarely more than three fruits in each umbellule attain perfection.

This is a low bushy plant, a native of Middle and South Europe, even to Tauria, Caucasus, and Persia, in corn-fields on a chalky soil. It appears not to have been found in Wales, Scotland, or Ireland.

For the specimen from which the drawing for the accompanying plate was made, I am indebted to my kind friend Mr. E. Jenner, of Lewes, Sussex.



Mœnchia erecta. Upright Mœnchia. ☉

Mathews Del. & Sc.

Pub.d by W. Baxter, Botanic Garden, Oxford, 1842.

MŒ'NCHIA[*].

Linnean Class and Order. TETRA'NDRIA[†], TETRAGY'NIA.

Natural Order. CARYOPHY'LLEÆ[‡], *Linn.*—Juss. Gen. Pl. p. 299.—Sm. Gram. of Bot. p. 159.—Lindl. Syn. p. 43.; Introd. to Nat. Syst. of Bot. p. 156.—Rich. by Macgilliv. p. 507.—Loud. Hort. Brit. p. 501.—Don's Gen. Syst. of Gard. & Bot. v. i. p. 379.—Mack. Fl. Hib. p. 40.—Hook. Brit. Fl. (4th ed.) p. 400.—ROSALES; subord. RHŒADOSÆ; sect. DIANTHINÆ; type, DIANTHACEÆ; Burn. Outl. of Bot. pp. 614, 784, 805, & 807.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 4 elliptic-spear-shaped, concave, equal, converging, pointed, membranous-edged, permanent sepals. *Corolla* (fig. 2.) of 4, spear-shaped, undivided, entire, upright petals, shorter than the calyx, withering. *Filaments* (see figs. 2 & 3.) 4, thread-shaped, ascending, shorter than the petals. *Anthers* (see fig. 3.) of 2 roundish lobes. *Germen* (see figs. 2 & 4.) superior, egg-shaped. *Styles* (see fig. 4.) 4, terminal, very short, spreading. *Stigmas* (see fig. 4.) blunt, downy. *Capsule* (see fig. 5.) membranous, the length of the calyx, cylindrical, slightly egg-shaped, of 1 cell, and 1 valve, opening at the summit with 8, occasionally 10, equal, shallow, pointed teeth. *Seeds* (figs. 6 & 7.) numerous, kidney-shaped, rough, attached, each on its own stalk to a central cylindrical *receptacle*, half the length of the capsule.

The *calyx* of 4 sepals; the *corolla* of 4 petals; and the 1-celled, 1-valved, many-seeded *capsule*, opening at its summit with 8 or 10 teeth; will distinguish this from other genera in the same class and order.

Differs from *Sagina* (t. 199.) in the capsule being 1-valved, not 4-valved.

One species British.

MŒ'NCHIA ERECTA. Upright Mœnchia. Upright Pearlwort. Least Stitchwort.

SPEC. CHAR. Herb glaucous. Stems upright, smooth. Leaves spear-shaped, acute. Peduncles solitary, long, 1-flowered.

Sm. Engl. Fl. v. i. p. 241.—With. (7th edit.) v. ii. p. 262.—Hook. Brit. Fl. p. 78.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 420.—Rev. G. E. Smith's Pl. of S. Kent, p. 12.—Walker's Fl. of Oxf. p. 46.—Winch's Fl. of Northumberl. and Durham, p. 11.—Bab. Fl. Bath p. 8.; Prim. Fl. Sarn. p. 15.—Pampl. Pl. of Battersea, p. 4.—Irv. Lond. Fl. p. 170.—Luxf. Reig. Fl. p. 15.—Leight. Fl. of Shropsh. p. 79.—*Mœnchia glauca*, Pers. Syn. Pl. v. i. p. 153.—Gray's Nat. Arr. v. ii. p. 661.—Lindl. Syn. p. 49.—Hook. Fl. Scot. p. 60.—Fl. Devon. pp. 32 and 183.—

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A separate Stamen.—Fig 4. Germen and Stigmas.—Fig. 5. Capsule, with the permanent Calyx.—Figs. 6 & 7. Seed.—*All*, except fig. 6, *magnified.*

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[*] So named, by EHRHART, in honour of Dr. CONRAD MŒNCH, Professor of Botany and Chemistry at Marburgh, and author of "Enumeratio plantarum indigenarum Hassiæ;" and several other Botanical works, between 1777 and 1802. He was born at Cassel, August 15th, 1744; and died at Marburgh, in the Electorate of Hesse, January 6th, 1805.

[†] See fol. 46, note †.

[‡] See fol. 152, *a*.

Mœnchia Quaternella, Ehrh. Phyt. p. 82.—*Sagina erecta*, Engl. Bot. t. 609.—Curt. Fl. Lond. t. 136.—Lindl. Sp. Pl. p. 185.—Huds. Fl. Angl. (2nd ed.) p. 73.—Willd. Sp. Pl. v. i. pt. I. p. 719.—Sm. Fl. Brit. v. i. p. 200.—Macr. Man. Brit. Bot. p. 31.—Dec. Prod. v. i. p. 389.—Lightf. Fl. Scot. v. i. p. 125.—Sibth. Fl. Oxon. p. 67.—Abbot's Fl. Bedf. p. 40.—Davies' Welsh Bot. p. 19.—Purt. Midl. Fl. v. i. p. 103. ; and v. iii. p. 340.—Relh. Fl. Cant. (3rd edit.) p. 71.—Perry's Pl. Varvic. Sel. p. 14.—*Alsinella foliis caryophylleis*, Ray's Syn. p. 344. t. 15. f. 4.—*Alsine verna glabra*, Vaill. Par. p. 6. t. 3. f. 2.

Localities.—In pastures on a gravelly soil, on heathy ground, and on old walls.—*Oxfordshire ;* Shotover Hill ; South Leigh Heath ; and Ensham Heath.—*Beds.* Clophill, and Ampthill Warrens —*Cambridgeshire ;* Gamlingay, near the wind-mills ; and on the heath —*Cheshire ;* Sandy ground in the West of Cheshire, about Bidston, &c.—*Devon ;* West Down near Exmouth ; Haldon ; heaths, and dry hedges, in the neighbourhood of Moreton and North Bovey ; Lympstone.—*Durham ;* In gravel-pits on Durham Moor ; and on limestone hills near Sunderland.—*Essex ;* Piptree Heath ; and Epping Forest.—*Hants ;* Shore at Portsmouth ; abundant on sandy commons.—*Kent ;* On Blackheath ; and upon sandy ground East of the Castle at Sandgate.—*Leicestershire ;* Banks of Grooby Pool, near the mill. Reservoir, Charnwood Forest ; also near the new Church.—*Middlesex ;* Old walls in the King's Road, Chelsea.—*Norfolk ;* Stanhoe ; S. Denes.—*Notts ;* Abundant in the neighbourhood of Nottingham.—*Shropshire ;* Hawkestone ; and near Oswestry.—*Somersetshire ;* By the road-side at Hinton.—*Staffordshire ;* Litchfield Race-ground.—*Suffolk ;* Bungay.—*Surrey ;* Abundant on sandy commons ; on Wimbledon Common ; Wandsworth Common ; Clapham Common ; Battersea Fields ; Barnes Common ; about Moulsey ; and on Reigate Heath.—*Sussex ;* Ashdown Forest.—*Warwickshire ;* Coleshill Heath ; Corby Moor, and other like places.—*Worcestershire ;* On the Malvern Hills, as high as 800 feet ; N. Hill, Malvern.—*Yorkshire ;* Near Rotherham.—WALES. *Anglesea ;* Near Beaumaris, thinly scattered ; on rocks sparingly covered with earth in Llandegfan ; and on a common called Rhos cefn hir, Pentraeth.—*Caernarvonshire ;* Banks and hilly pastures about Bangor.—*Montgomeryshire ;* Foot, and top of Breiddon Hill, near Rodney's Pillar (1199 feet).—SCOTLAND. In pastures, on a gravelly soil.—Not in the *Flora* of IRELAND.

For authorities, see Watson's *New Botanist's Guide*, and the *Floras* of the respective counties.

Annual.—Flowers in April and May.

Root small, fibrous. *Stems* usually several, from 2 to 4 inches high, upright, or slightly reclining at the base, round, smooth, leafy. *Leaves* opposite, sessile, strap-spear-shaped, acute, entire, rigid, single-ribbed, glaucous. *Flowers* upright, solitary, on long terminal peduncles. *Sepals* (see fig. 1.) large, elliptic-spear-shaped, pointed, upright, converging, white and membranous at the edges, permanent. *Petals* (see fig. 2.) white, spear-shaped, entire, about as long as the sepals, withering. *Capsule* (see fig. 5.) of a light shining brown. *Seeds* (see figs. 7 & 8.) numerous, of an orange-brown colour, minutely tuberculated.

Whole plant of a somewhat glaucous colour, and quite smooth. In dry ground the stem is often simple ; but if the situation where it grows be moist, it throws out many stems, which at first recline on the ground, but afterwards become upright. The *calyx* never opens far, so that the *corolla* is not suffered fully to expand.

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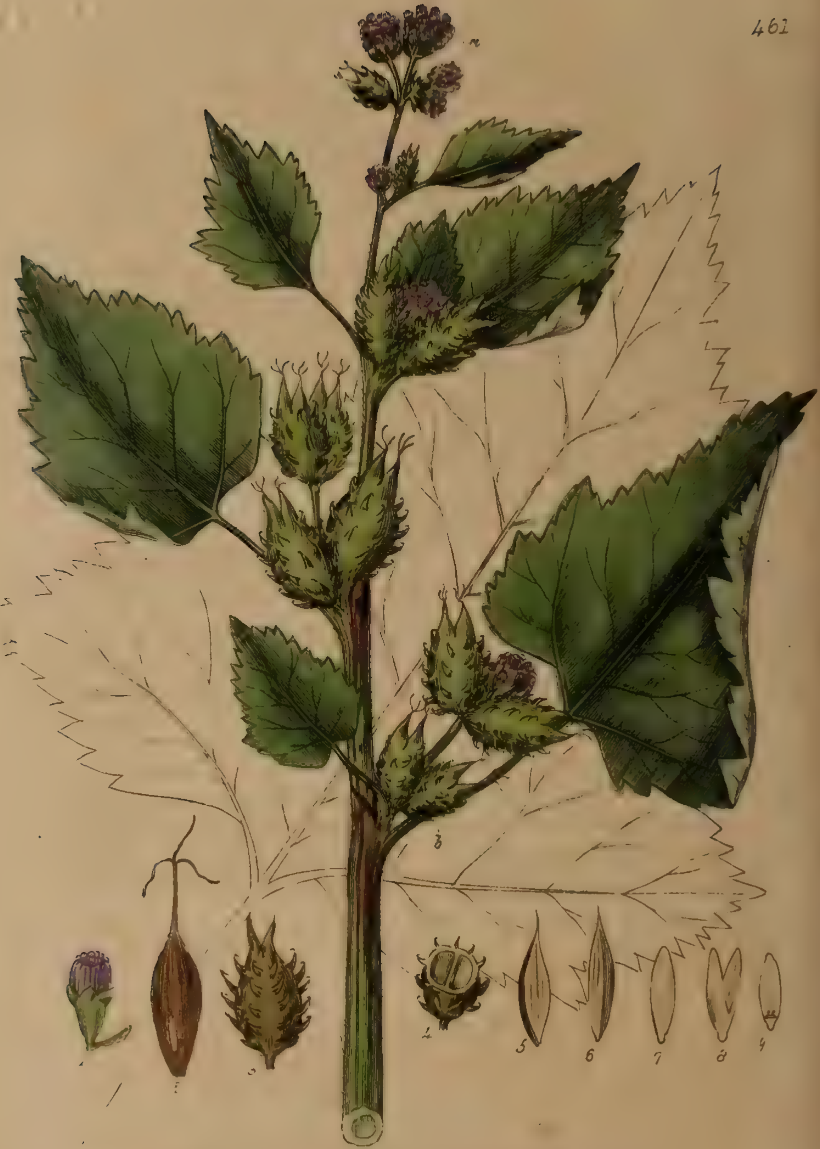
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Xanthium strumarium. Small Burdock ⊙

[illegible] Pub.d by W. Baxter Botanic Garden Oxford 1842.

XA'NTHIUM *.

Linnean Class and Order. MONŒ'CIA †, PENTA'NDRIA ‡.

Natural Order. COMPO'SITÆ §; tribe, CORYMBI'FERÆ ||, *Juss.* —Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 & 199.—Mack. Fl. Hibern. p. 142.—Hook. Brit. Fl. (4th ed.) p. 410.—COMPO'SITÆ; subord. AMBROSIA'CEÆ, Loud. Hort. Brit. pp. 520 & 522.—CORYMBI'FERÆ, sect. 9. Juss. Gen, Pl. pp. 177 and 191.—Sm. Gram. of Bot. pp. 121, 122 & 124.—SYRINGALES; suborder, ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 901, 920, 924, & 926.—COMPO'SITÆ, ζ NUCAMENTACEÆ, *Linn.*

GEN. CHAR. *Sterile Flower* (fig. *a.*) compound. *Involucrum (common calyx)* of many, thin, imbricated, equal scales, on a level with the numerous *florets*. *Corolla* compound, hemispherical, uniform; *florets* (see fig. 1.) monopetalous, tubular, funnel-shaped, upright, in 5 equal, marginal segments. *Filaments* 5 in each floret, converging in the form of a cylinder. *Anthers* upright, distinct, parallel. *Common Receptacle* scarcely any; the florets separated by scales.—*Fertile Flowers* (fig. *b.*) below the sterile ones. *Involucrum (common calyx)* (see fig. 3.) single, prickly, with 2 beaks, entirely enclosing 2 flowers. *Calyx* none. *Corolla* none. *Germen* oval, clothed with the prickly involucrum. *Styles* 2 pair, hair-like. *Stigmas* undivided, protruded from small apertures within the beaks of the involucrum. *Fruit* (see fig. 2.) 1-seeded, included in the enlarged and hardened involucrum (figs. 3 & 4).

The *sterile flower* with a many-leaved, and many-flowered *involucrum*, all tubulur *florets*, and a chaffy receptacle; and the *fertile flower* with a single, prickly, 2-flowered *involucrum*, which enlarges after flowering, and encloses the *fruit;* will distinguish this from other genera in the same class and order.

One species British.

XA'NTHIUM STRUMA'RIUM. Lesser Burdock ¶. Broad-leaved Bur-weed. Burdock Clotweed. Ditch-burr. Louse-burr.

SPEC. CHAR. Stem unarmed. Leaves heart-shaped; 3-ribbed at the base. Beaks of the fruit straight, the prickles hooked.

Engl. Bot. t. 2544.—Fl. Dan. t. 970.—Linn. Sp. Pl. p. 1400.—Huds. Fl. Angl. (2nd ed.) p. 418.—Willd. Sp. Pl. v. iv. pt. I. p. 373.—Sm. Fl. Brit. v. iii. p. 1017.; Engl. Fl. v. iv. p. 136.—With. (7th ed.) v. ii. p. 360.—Lindl. Syn. p. 151.—Hook. Brit. Fl. p. 403.—Macr. Man. Brit. Bot. p. 125.—Winch's Fl. of Northumb. and

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a. A Sterile Flower.—*b.* A Fertile Flower.—Fig. 1. A Sterile Floret.—Fig. 3. Involucrum of a Fertile Flower, containing 2 fruits.—Fig. 4. Transverse section of the same.—Fig. 2. A Fruit.—Figs. 5 and 6. Seeds.—Fig. 7. The Embryo.—Fig. 8. The same with the cotyledons separated.—Fig. 9. One of the Cotyledons removed, showing the plumule.

From *Xanthos*, Gr. *yellow*, or *fair;* because an infusion of it was supposed to improve the colour of the hair; or, from the plant yielding a dye of that colour.

† See fol. 83, n. †. ‡ See fol. 48, n. †. § See fol. 27, *a.* || See fol. 26, *a.*

¶ From its resemblance in habit, foliage, and inflorescence, to the *Arctium Lappa*, or common Burdock, t. 333.

Durh. p. 61.—Irv. Lond. Fl. p. 155.—Mack. Fl. Hibern. p. 153.—*Xánthium inerme*, Gray's Nat. Arr. v. ii. p. 255.—*Xanthium seu Lappa minor*, Ray's Syn. p. 140—Bauh. Hist. v. iii. pt. II. p. 572, with a figure.—*Bardana minor*, Johns. Gerarde, p. 809.—*Bardana minor seu Xanthium*, Merr. Pin. p. 14.—*Small Burdock*, Petiv. H. Brit. t. 1. f. 12.

Localities.—In rich moist ground, or about dunghills; very rare.—*Dorset;* "I found one plant only by the river side, on a dunghill, at Wareham, on the right hand of the bridge, in the way to Stowborrow:" Pulteney, in B. G.—*Durham;* On Jarrow, and South Shields, and Sunderland Ballast-hills: N. J. Winch, Esq.—*Hants;* "I found it once in the road from Portsmouth to London, some three miles from Portsmouth:" Ray. Mr. Woods has sought for it here in vain: B. G.—*Kent;* In the road at Dulwich, a little on this side the College, just by the style going the foot-way from thence to London: T. Willisel and Mr. Newton, in Ray's Syn. Mr. Woods sought for it here in vain: B. G.—*Middlesex;* Near London, by the foot-way to the New River; and at Staines: Martyn. Mr. Woods could not find it here.—*Northumberland;* On Byker and Willington Ballast-hills: N. J. Winch, Esq.—*Surrey;* In a bog beyond Peckham: Merrett. By the Canal Bridge, Peckham, a single plant: Mr. H. C. Watson, in N. B. G.—IRELAND. Said to have been found near Listowel, county of Kerry: Mr. J. T. Mackay.

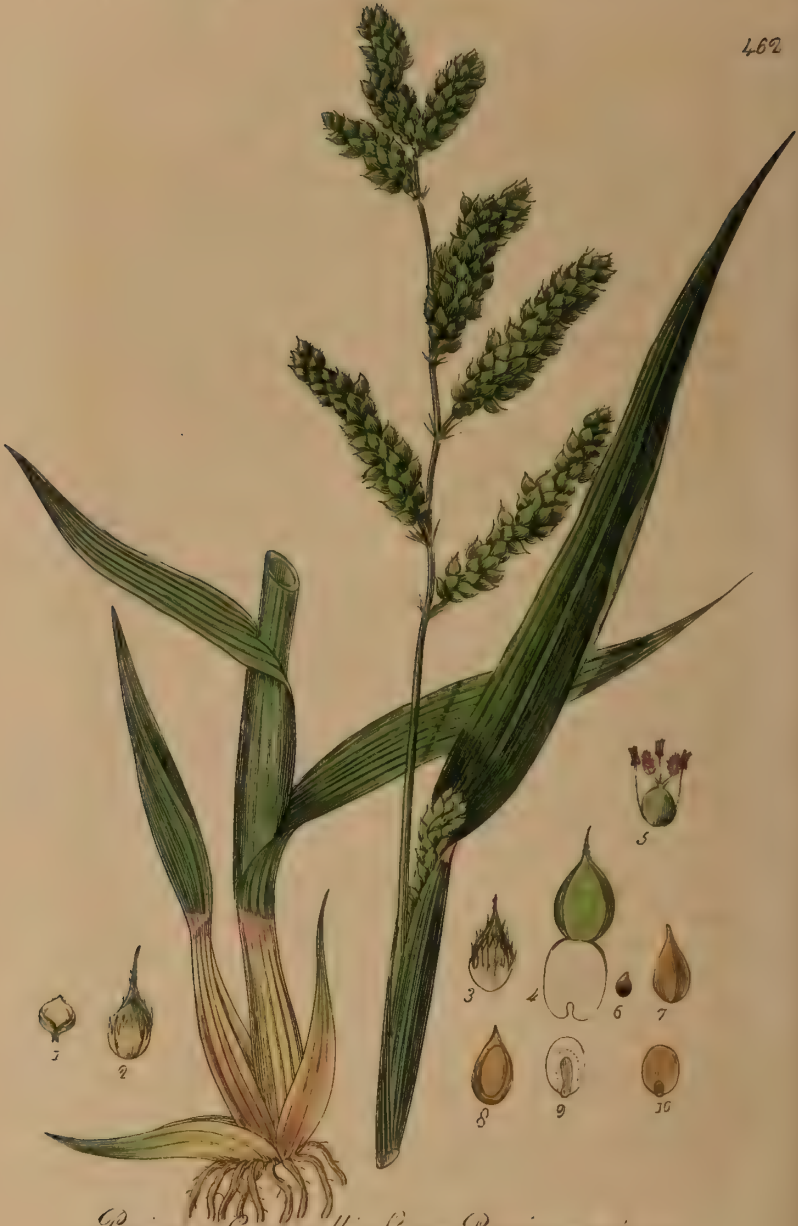
Annual.—Flowers in August and September.

Root fibrous. *Stem* solitary, upright, from one to two feet high, branched, leafy, furrowed, solid, downy. *Leaves* alternate, on long petioles, heart-shaped, lobed, cut, and doubly serrated; nearly four inches long, and two or three inches wide; with three principal nerves at the base, minutely downy all over; dark green on the upper surface, paler underneath. *Racemes* axillary, leafy, few-flowered. *Sterile Flowers* one or two on each raceme; *anthers* separate, not united as in the class Syngenesia. *Fertile Flowers* four or five on each raceme, immediately beneath the *sterile ones;* all green. *Involucrum* of the fertile flowers (see fig. 3.) oblong, coriaceous, prickly, divided by a longitudinal partition (see fig. 4.), ending at top in two beaks, which at first are straight, but afterwards curved inwards and hooked, gaping in the inner side by a longitudinal cleft, but not splitting. *Fruit* (see fig. 2.) 1-seeded, dark brown, enclosed in the enlarged and hardened involucrum. *Seeds* (figs. 5 & 6.) oblong, attenuated at each end, striated, convex on one side, flat on the other.

This is "a rank, weed-like plant," very rarely to be met with in a wild state in England; most of the localities given above being doubtful ones. It is, however, said to be more common in some other parts of Europe; and also in Africa about Algiers; and in China and Cochinchina, in fields and hedges.

The leaves are bitter and astringent, and were formerly in repute for the cure of scrophulous disorders, to which the specific name alludes. A decoction of the whole plant affords a showy yellow colour; but it is better if only the flowers are used. Horses and goats eat it; cows, sheep, and swine refuse it. The seeds are said to be the favourite food of the Carolina Parrot, or Paraquet.

The drawing for the accompanying plate was made from a well preserved specimen in the *Sherardian Herbarium.* The sections are from *English Botany,* and from Gærtner's *De Fructibus et Seminibus Plantarum,* t. 164. f. 9.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Panicum Crus-galli. Looſe Panic-graſs. ☉

Watsons, Del. & Sc.   Pub.d by W. Baxter Botanic Garden Oxon.

PA'NICUM[*].

Linnean Class and Order. TRIA'NDRIA[†], DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 68.; Engl, Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.*—Rich. by Macgill. p. 393.—GRAMINALES; sect. PANICINÆ; type, MILIACEÆ; Burn. Outl. of Bot. v. i. pp. 359 & 366.

GEN. CHAR. *Panicle* spiked; spikes compound. *Calyx* (see figs. 2 & 3.) 2-flowered, of 2 unequal glumes, the outer glume minute, (see fig. 1.) sometimes obsolete; the inner much larger, concave, mucronate or awned (see figs. 2 & 3). *Florets* dissimilar; *outer* with *anthers* only, or *neuter*, (see fig. 4), with 1 or 2 paleæ, outer palea with the texture of the calyx, ribbed, more or less awned; *inner floret* perfect, of 2 paleæ, cartilagenous, enveloping and somewhat adhering to the *fruit*. *Filaments* (see fig. 5.) 3, hair-like, as long as the corolla. *Anthers* short, cloven at each end. *Germen* (see fig. 5.) egg-shaped. *Styles* (see fig. 5.) 2, distinct, awl-shaped, as long as the stamens. *Stigmas* feathery, tufted, short. *Seed* (see figs. 9 & 10.) somewhat egg-shaped, flattened on one side, coated with the hardened corolla (see figs. 6, 7, and 8).

The compound spike-like *panicle*, without bristly *involucrums*; the *calyx* of 2 unequal glumes, containing 2 florets, one of which is neuter, or has anthers only; and the other perfect, of 2 cartilaginous *paleæ (valves)* which envelope, and somewhat adhere to, the fruit; will distinguish this from other genera in the same class and order.

The absence of the bristly involucrum at the base of the spikelets will distinguish this genus from that of *Setaria*, (see t. 211. f. 2).

One species British.

PA'NICUM CRUS-GALLI. Cock's-foot Panick-grass. Loose Panick-grass,

SPEC. CHAR. Spikes alternate, secund, divided or simple. Florets imbricated, the calyx, and outer valve of the corolla of the neuter floret hispid, awned, or mucronated; inner valve (palea) of the perfect floret with a hispid mucro. Rachis hispid. HOOKER.

Engl. Bot. t. 876.—Curt. Fl. Lond. t. .—Knapp's Gram. Brit. t. 11.—Graves' Brit. Grasses, t. 12.—Linn. Sp. Pl. p. 83.—Huds. Fl. Angl. (2nd ed.) p. 24.—Willd. Sp. Pl. v. i. pt. 1. p. 337.—Sm. Fl. Brit. v. i. p. 65.; Engl. Fl. v. i. p. 99.—With. (7th ed.) v. ii. p. 144.—Hook. Brit. Fl. p. 39.—Schrad. Germ. v. i, p. 243.—Leers' Fl. Herbor. p. 13. t. 2. f. 3.—Irv. Lond. Fl. p. 96.—Pampl. Pl. of Battersea, p. 4.—*Panicum sylvestre herbariorum*, Park. Theatr. p. 1154, with a figure.—*Panicum sylvestre*, Johnson's Gerarde, p. 85, with a figure.—*Echinochloe Crus-*

Fig. 1. Small outer Glume of the Calyx.—Figs. 2 & 3. Larger Glume of the Calyx, accompanied by the Florets.—Fig. 4. A neuter Floret.—Fig. 5. Stamens and Pistils of a perfect Floret.—Figs. 6, 7, and 8. Seed, inclosed in the hardened valves of the Corolla.—Figs. 9 & 10. The Seed removed from its covering.

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[*] From *panis*, *bread*; the seeds of some species being used for bread.

[†] See folio 45, note †.

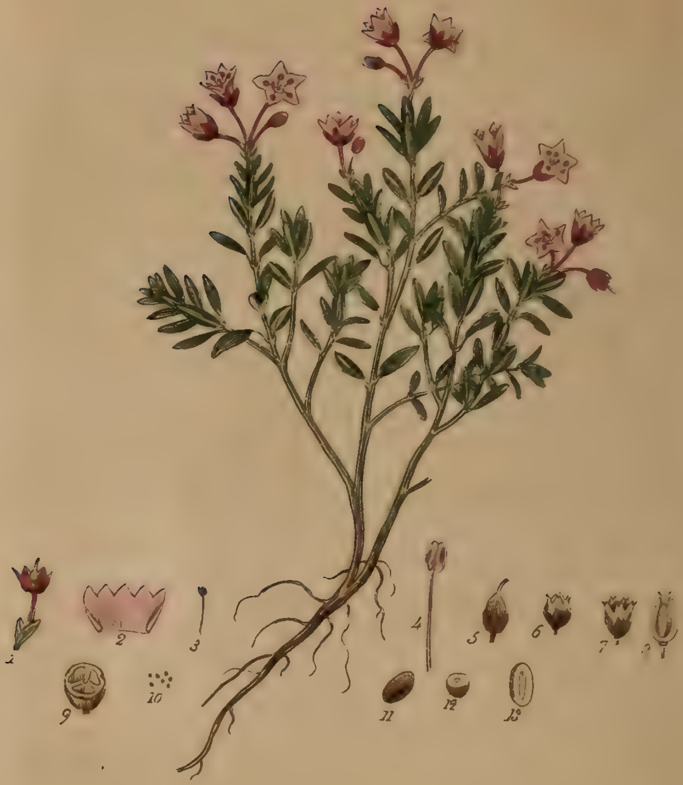
galli, Roemer. Syst. Veg. v. ii. p. 478.—Gray's Nat. Arr. v. ii. p. 157.—Lindl. Syn. p. 305.—*Oplismenus Crus-galli*, Macr. Man. Brit. Bot. p. 261.—*Gramen paniceum, spicâ divisâ*, Bauh. Pin. p. 8.; Theatr. p. 136, with a figure.—Scheuchz. Agros. p. 49.—Ray's Syn. p. 394.—Moris. v. iii. p. 189. n. 15. sect. 8. t. 4. f. 15.; also n. 16. f. 16.

Localities.—In moist arable land; very rare.—*Essex;* In a coppice near Purfleet: Dr. Miln.—*Hants;* By a rivulet side near Petersfield: Mr. Goodyer, in *Merr. Pin.* p. 56.—*Kent;* Thomas Willisell found it in Mr. Blesset's garden between Deptford and Greenwich: Ray (1690).—*Middlesex;* In a lane by the Neat-house Gardens, Chelsea: *Ray's Syn.* (3rd ed.) p. 394.—*Surrey;* In moist places about Battersea and Putney: Rev. J. Lightfoot.—Battersea Fields, in abundance; 1831: Mr. W. Pamplin, jun. About Martha's Chapel near Guildford: Hudson.

Annual.—Flowers in July.

Root fibrous. *Culms (stems)* several, at first procumbent, finally almost upright, from 1 to 2 feet high, stout, leafy, jointed, smooth, with some tufts of radical leaves, and a few short, more spreading, stems, at their base. *Leaves* harsh, pointed, neither warty nor hairy, rough at the margins. *Stipulas* none. *Sheaths* large, compressed, striated, smooth. *Panicle* upright, rigid, composed of many unilateral, spike-like branches, of which the lower ones are rather distant, the upper crowded; all with tufts of fine smooth bristles, originating in tubercles, at their base. Larger glume of the *calyx* (see figs. 2 and 3.) egg-shaped, concave, ribbed, bristly, pointed, or slightly awned; smaller glume (see fig. 1.) cup-shaped, embracing the whole base of the flower. Perfect *floret* of 2, egg-shaped, awnless valves (paleæ), very smooth and even, finally horny, coating the seed; the larger concave, obscurely ribbed; the inner smaller, flattish. Neuter *floret* of 2 very dissimilar valves (paleæ); the outermost resembling the outer glume of the calyx, concave, ribbed, bristly, inflexed at the edges, and terminating in a rough, straight awn, generally short, as in the specimen figured, but sometimes very long, as in Leers' fig. 3, in t. 2., and Morison's fig. 16.; the innermost rather smaller, thinner, flat, notched at the tip (see fig. 4). *Stamens* and *Pistils* (see fig. 5.) in the perfect flowers only, about as long as the corolla. *Filaments* hair-like. *Anthers* cloven at each end, purplish. *Germen* (see fig. 5.) roundish. *Styles* very short. *Stigmas* feathered, and purplish. *Seed* rather large, shining, coated with the valves of the corolla, round on one side, and flat on the other, figs. 6, 7, 8. Figs. 9 and 10, represent the seed when taken from its covering. See *Sm. Engl. Fl.; Curt. Fl. Lond., &c.*

Panicum Crus-galli is a native of Virginia, the Cape of Good Hope, and several parts of Europe, as Sweden, Germany, Switzerland, the South of France, and England. It produces abundance of rather large seeds, which are acceptable to small birds. Though not hitherto cultivated, Salisbury says it possesses qualities which render it worth attention. It stands dry weather better than most other grasses, will attain the height of four feet, and is not disagreeable to cattle.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Azalea procumbens. Trailing Azalea. ♄

Mathews, Del. & Sc

Pub.d by W. Baxter Botanic Garden Oxford 1842

AZA'LEA [*].

Linnean Class and Order. Penta'ndria [†], Monogy'nia.

Natural Order. Eri'ceæ [‡], *Brown's* Prod. p. 557.—Lindl. Syn. p. 172; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 179.—Hook. Brit. Fl. (4th ed.) p. 411.—Erica'ceæ; subtribe, Androme'deæ, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 and 787.—Loud. Arb. et Frutic. Brit. pp. 1076 & 1077.—Ericineæ, Rich. by Macgilliv. p. 450.—Rhododendra, Juss. Gen. Pl. p. 158.—Sm. Gr. of Bot. p. 114.—Syringales; subord. Ericosæ; sect. Ericinæ; type, Ericaceæ; subtype, Ericidæ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—Bicornes, *Linn.*

Gen. Char. *Calyx* (see fig. 1.) inferior, of 1 sepal, in 5 deep, acute, upright segments, coloured, permanent. *Corolla* of 1 petal, shortly bell-shaped, regular, 5-cleft (see fig. 2). *Filaments* (figs. 3 and 4.) 5, thread-shaped, unconnected, inserted into the receptacle. *Anthers* (see fig. 4.) roundish, bursting longitudinally. *Germen* (see fig. 5.) globular, with 2 or 3 longitudinal furrows. *Style* (see fig. 5.) cylindrical, upright, the length of the germen, permanent. *Stigma* capitate, umbilicated. *Capsule* (see figs. 6 to 9.) roundish, with 2 or 3 furrows, 2 or 3 cells, and 2 or 3 cloven-pointed valves, whose inflexed edges form the double partitions (dissepiments). *Seeds* (see figs. 10 to 13.) numerous, roundish, dotted, attached to a central, at length free, receptacle (placenta).

The inferior, 5-parted, coloured *calyx;* the monopetalous, shortly bell-shaped, regular *corolla;* the straight *stamens*, inserted into the receptacle; and the 2- or 3-celled, 2- or 3-valved, many-seeded *capsule*, with the dissepiments formed by the inflexed edges of the bifid valves; will distinguish this from other genera in the same class and order.

One species British.

AZA'LEA PROCU'MBENS. Trailing Azalea. Trailing Rose-bay. Thyme-leaved Dwarf Cistus.

Spec. Char. Branches spreading wide and trailing. Leaves opposite, revolute, very smooth.

Engl. Bot. t. 865.—Fl. Dan. t. 9.—Lodd. Bot. Cab. t. 762.—Linn. Sp. Pl. p. 215; Fl. Lapp. (2nd ed.) p. 60. t. 6. f. 2.—Huds. Fl. Angl. (2nd ed.) p. 88.—Willd. Sp. Pl. v. i. pt. ii. p. 832.—Sm. Fl. Brit. v. i. p. 231.; Engl. Fl. v. i. p. 282.—With. (7th ed.) v. ii p. 298.—Lindl. Syn. p. 172.—Hook. Brit. Fl. p. 97.—Macr. Man. Brit. Bot. p. 152.—Don. Gen. Syst. of Gard. and Bot. v. iii. p. 851.—Loud. Arb. et Frutic. Brit. v. ii. p. 1154. f. 964.—Lightf. Fl. Scot. v. i. p. 139.—Hook. Fl. Scot. p. 73.—Murr. Northern Fl. p. 130.—Irv. Lond. Fl. p. 230.—*Azalea ramis*

Fig. 1. A single Pedicel, with the Bracteas, Calyx, and Pistil.—Fig. 2. Corolla opened vertically.—Figs. 3 & 4. A Stamen.—Fig. 5. Calyx and Germen.—Figs. 6 and 7. Capsules.—Fig. 8. Vertical section of a Capsule.—Fig. 9. Transverse section of ditto.—Figs. 10, 11, 12, & 13. Seeds.—*All*, except fig. 10, *more or less magnified.*—Figs. 8 to 13 from Gærtner.

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[*] From *azaleos*, Gr. *dry*, or *acrid;* in reference to the habitation of the plant.

[†] See folio 48, note †.

[‡] See folio 449, *a*.

diffusis procumbentibus, Linn. Fl. Lapp. (1st ed.) p. 58. t. 6. f. 2.—*Chamæcistus serpyllifolius*, Johnson's Gerarde, p. 1284, with a figure.—Gray's Nat. Arr. v. ii. p. 401.—*Chamæledon procumbens*, Link. Enum. v. i. p. 210.—*Anonymos fruticosa, foliis ericæ bacciferæ Matthioli*, Bauh. Hist. v. i. p. 527, with a figure.

Localities.—On dry moory ground, on most of the Scottish Highland Mountains, among grass and moss.—*Aberdeensh.* Avon Hills, in many places, from 700 to 1150 yards: N. B. G. Loch-na-Garr: Murray.—*Argylesh.* Ben Cruachan; and Locheil Moors: N. B. G.—*Banffsh.* near Loch Avon: N. B. G.—In *Dumbartonshire;* N. B. G.—*Forfarsh.* On the hill between Glen Bradooney and Glen Dole; and others of the Clova Mountains: Mr. H. C. Watson. On the top of Cairn Inks, a mountain opposite the Inn at Clova: Murray.—*Inverness-shire;* By the Lake on Ben Nevis: Mr. H. C. Watson. Benvochart, near Inverness: Mr. Anderson. Cairngorm: Mr. Smith.—*Orkney;* Hoy Hill: N. B. G.—*Perthsh.* Ben Lawers; Ben More; South-east shoulder of Ben Voirlich; Ben Glow (Ben-y-Gloe?); and Ben Ferrag, by Loch Ericht: N. B. G.—*Ross-shire;* Ben Wevis: N. J. Winch, Esq. Hills of Ross-shire: Mr. G. C. Smith.—In *Shetland*: Mr. Hewitson.—*Sterlingsh.* Ben Lomond: Mr. J. Hooker.—*Sutherland;* Fonniven: Graham. Ben Hope, and Ben Heeal: Mr. H. C. Watson.

Shrub.—Flowers from April to July.

Root woody, branching, fibrous. *Stems* dwarfish, woody, rigid, tortuous, round, darkish-brown, and naked below, leafy above, very much branched; branches crowded, leafy, each 2 or 3 inches long, depressed, spreading in all directions. *Leaves* numerous, small, opposite, on very short, somewhat dilated petioles, oval, entire, very much resembling those of *Thyme* (t. 127), quite smooth, glossy, dark-green, channelled on the upper surface, with the margins remarkably revolute, so as almost to meet the thick, broad, prominent midrib of the under surface, which is paler. *Flowers* small, in short terminal *racemes*. *Pedicels* (see fig. 1.) smooth, red, each with an egg-shaped *bractea* at its base, swollen upwards. *Calyx* (see fig. 1.) purple, permanent, in 5 deep, oblong, fleshy segments. *Corolla* rose-coloured, in 5 oblong, bluntish, moderately spreading segments. *Stamens* inserted upon a fleshy disk or base to the germen, a little shorter than the corolla; *anthers* (see fig. 4.) of 2 oval cells, opening by a longitudinal fissure. *Germen* (see fig. 5.) on a fleshy base or disk, egg-shaped, 2- or 3-celled. *Capsule* (see fig 6 to 9.) broadly egg-shaped, purplish-brown, with a spongy coat, and deciduous cuticle; opening by 2 or 3 valves, according as the cells are 2 or 3. *Seeds* (see figs. 10 to 13) oval, pale brown, dotted, fixed to the lobes of a central, at length, (when the valves open,) free column or receptacle. See *Hook. Brit. Fl.*

Authors differ in opinion respecting the number of valves and cells which compose the capsules of this species. Gærtner found but 2, or more commonly 3, cells to the capsule, never 5; and his observations are confirmed by those of Sir W. J. Hooker. Linnæus describes them (*Tour in Lapland*, v. i. p. 285.) as having 5 cells and 5 valves; and Sir J. E. Smith says (*Engl. Fl.* v. i. p. 282), that he found 4 or 5. The capsules of some specimens of *Azalea procumbens*, in the *Sherardian Herbarium*, appear, some to have 4, and others 5 valves, but, on a close inspection of them, I found the former were only 2, and the latter only 3-celled; each valve being divided so far down as to look like two.

This interesting and elegant little shrub, which is so plentiful on the tops of many of the mountains in Scotland, has not, I believe, been found either in England or Ireland. It is said to abound in the Arctic Regions, and throughout the whole of the northern hemisphere. In North America, it is found wild in the alpine regions of the White Mountains, New Hampshire; and on Grandfather Mountain, Carolina, &c.

For the specimen figured, I am indebted to Mr. W. Jackson, jun. of Dundee, who gathered it on the Clova Mountains, in July, 1840.

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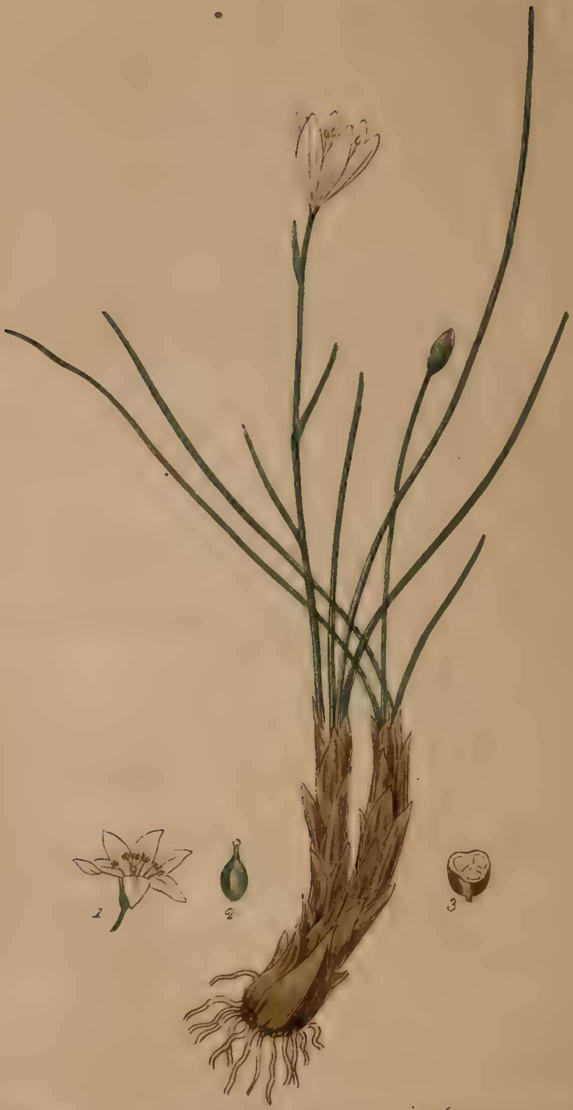

Anthericum serotinum. Mountain Spider-wort. V.

Mathews, Del. & Sc. Pub.^d by W. Baxter. Botanic Garden. Oxford 1842

ANTHE'RICUM [*].

Linnean Class and Order. HEXA'NDRIA [†], MONOGY'NIA.

Natural Order. ASPHODE'LEÆ [‡], *Dr. R. Brown.*—Lindl. Syn. p. 266.; Introd. to Nat. Syst. of Bot. p. 273.—Loud. Hort. Brit. p. 539.—Mack. Fl. Hib. p. 284.—Hook. Brit. Fl. (4th ed.) p. 423.—ASPARAGI, sect. I. Juss. Gen. Pl. p. 40.—Sm. Gram. of Bot. p. 71.—ASPARAGINEÆ, sect. I. Rich. by Macgilliv. p. 402.—ASPARAGEÆ, Macr. Man. Brit. Bot. p. 233.—LILIALES; sect. LILIACINÆ; type, ASPHODELACEÆ; Burn. Outl. of Bot. v. i. pp. 418, 425, & 427.—CORONARIÆ, *Linn.*

GEN. CHAR. *Calyx* none. *Corolla (perianthium*[§]*)* (fig. 1.) inferior, of 6 equal, elliptic-oblong, spreading petals. *Filaments* (see fig. 1.) 6, thread-shaped, straight; usually naked, sometimes bearded. *Anthers* roundish, versatile. *Germen* (fig. 2.) superior, roundish, with 3 angles. *Style* (see fig. 3.) thread-shaped, or partly triangular, upright, permanent. *Stigma* blunt. *Capsule* (see fig. 3.) roundish, with 3 angles, 3 cells, and 3 valves, with central partitions; blunt, or concave, at the summit, and crowned with the style. *Seeds* few, angular, naked at the hilum.

The inferior *corolla*, of 6 elliptic-oblong petals; the thread-shaped, straight *filaments*; the roundish 3-celled capsule; and the angular seeds, naked at the hilum; will distinguish this from other genera, without a *calyx*, in the same class and order.

One species British.

ANTHE'RICUM SERO'TINUM [||] Late Spider-wort. Mountain Spider-wort. Saffron Spider-wort.

SPEC. CHAR. Leaves semicylindrical; those on the stem dilated at their base. Flowers mostly solitary.

Engl. Bot. t. 793.—Jacq. Fl. Austr. App. t. 38.—Linn. Sp. Pl. p. 444.—Huds. Fl. Angl. (2nd ed.) p. 144.—Willd. Sp. Pl. v. ii. pt. I. p. 134.—Sm. Fl. Brit. v. i. p. 367.; Engl. Fl. v. ii. p. 150.—With. (7th ed.) v. ii. p. 431.—Lindl. Syn. p. 269.—Hook. Brit. Fl. p. 157.—Irv. Lond. Fl. p. 239.—*Phalangium serotinum*, Lamark. Ency. Meth. v. iii. p. 241.—Gray's Nat. Arr. v. ii. p. 175.—Macr. Man. Brit. Bot. p. 236.—*Bulbosa alpina juncifolia, pericarpio unico erecto in summo cauliculo dodrantali*, Ray's Syn. (2nd ed.) p. 233.—*Bulbocodium alpinum, pumilum, juncifolium, flore unico, intûs albo, extus squalidè rubente*, Dill. in Ray's Syn. p. 374. t. 17. f. 1.—*Bulbocodium serotinum*, Linn. Sp. Pl. (1st ed.) p. 294.—*Pseudo-narcissus, gramineo folio*, Bauh. Pin. p. 51. Prod. p. 27.—Rudb. Elys. v. ii. p. 64. f. 9.—*Narcissus autumnalis minor*, Bauh. Hist. v. ii. p. 663, left-hand figure only.

Fig. 1. A Flower, opened to show the Stamens.—Fig. 2. Germen, Style, and Stigma.—Fig. 3. Transverse section of a Capsule.

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[*] Erom *anthericos*, Gr.; applied by the Greeks to the stem of the *Asphodel*. HOOKER.

[†] See fol. 33, note †.

[‡] See fol. 41, *a*.

[§] See fol. 33, note ‡.

[||] The specific name, which is incorrect for a plant blossoming in June, (MARTYN says April and May,) seems to have originated in a confusion of synonyms between this *Anthericum* and the *Narcissus serotinus* of *Clus. Hist.* v. i. p. 162, the figure in which is copied in JOHN BAUHIN'S Historia, and there placed with our *Anthericum*. Sir J. E. SMITH.

LOCALITIES.—On the loftiest Welsh mountains.—*Caernarvonsh.* On Snowdon; and on the mountains in the neighbourhood of Llanberries; on the west side of Trigvilchau: RAY. Abundant on rocks above Twll-dû: I have also found it in one place only on the rocks of Crib y Ddescil, but could never find it on Clogwyn ddû'r Arddû: Mr. GRIFFITH in B. G. On Clogwyn ddû's Arddû: Rev. H. DAVIES, ibid. Rocks near Twll-dû: J. E. BOWMAN, in N. B. G. Near the summit of Glydyr Fawr: Mr. W. WILSON, in Brit. Fl. Just coming into flower, May 30, 1828, on rocks close to the chasm called Twll Du on Cwm Idwal: N. J. WINCH, Esq., in *Loud. Mag. Nat. Hist.* v. ii. p. 279.

Perennial.—Flowers in June.

Root somewhat tuberous, rather than bulbous, with many long slender fibres. *Stem* solitary, from 3 to 6 inches high, round, generally simple and single-flowered, rarely 2-flowered. *Root-leaves* few, upright, semicylindrical, solid, very slender, often longer than the stem. *Stem-leaves* 3 or 4, much shorter than the root-leaves, spear-awl-shaped, sheathing, scattered, and more resembling *bracteas* than leaves. *Flowers* upright, usually one only, very rarely more. *Petals* scarcely half an inch long, tapering at the base, white, veined externally with dull red, withering, permanent, as well as the *stamens*. *Filaments* beardless, not attached to the petals. *Germen* (see fig. 2.) obscurely triangular. *Stigma* triangular, truncated. *Capsule* the size of a pea, membranous. *Seeds* angular, wrinkled, of a bright chesnut colour (*Sm. Eng. Fl.*). Mr. W. WILSON (in HOOKER'S *British Flora*) says, the *flower-stalk* is invested with its own sheath, and separated by an elongation of the *root* from the *leaves*, of which the most distant encloses within its fleshy base the rudiment of the plant of the following season. The same excellent Botanist also observes, that the plant is increased by offsets or creeping shoots with a bulb at the extremity, the point of the bulb directed towards the parent root. Sir J. E. SMITH says he could not perceive the black brittle *skin* on the seeds of this plant, which is proper, as Mr. BROWN observes, to his *Asphodeleæ.*

Anthéricum serótinum is a smooth, slender plant, growing only on high mountains in Switzerland, Dauphinè, Piedmont, Austria, &c. In Britain it has been found only on some of the loftiest mountains in Wales.

SPRING.

How shall I woo thee, beautiful Spring?
What shall my offering be?
Shall I search the abode of the Ocean King,
And a chaplet of pearls bring thee?
Oh, no! for there shines in thy clustering curls
The dew-drops of morning brighter than pearls.

Shall I seek the sweet South, where the balmy breeze
Kisses lightly the cheek of her flowers?
Shall I bring them to thee with their perfumed leaves,
And plant them within thy bowers?
Oh, no! for the violet that blooms at thy feet
Has a lovelier glow, and a breath more sweet.

How shall I woo thee, beautiful Spring?
From whence shall my offering come?
Shall I echo the birds as they joyously sing
In the groves of thy flowering home?
Oh, yes! for sweet music alone has the spell
To fathom the depths of thy leafy dell.

A. C. TURNBULL.

Bath and Cheltenham Gazette.

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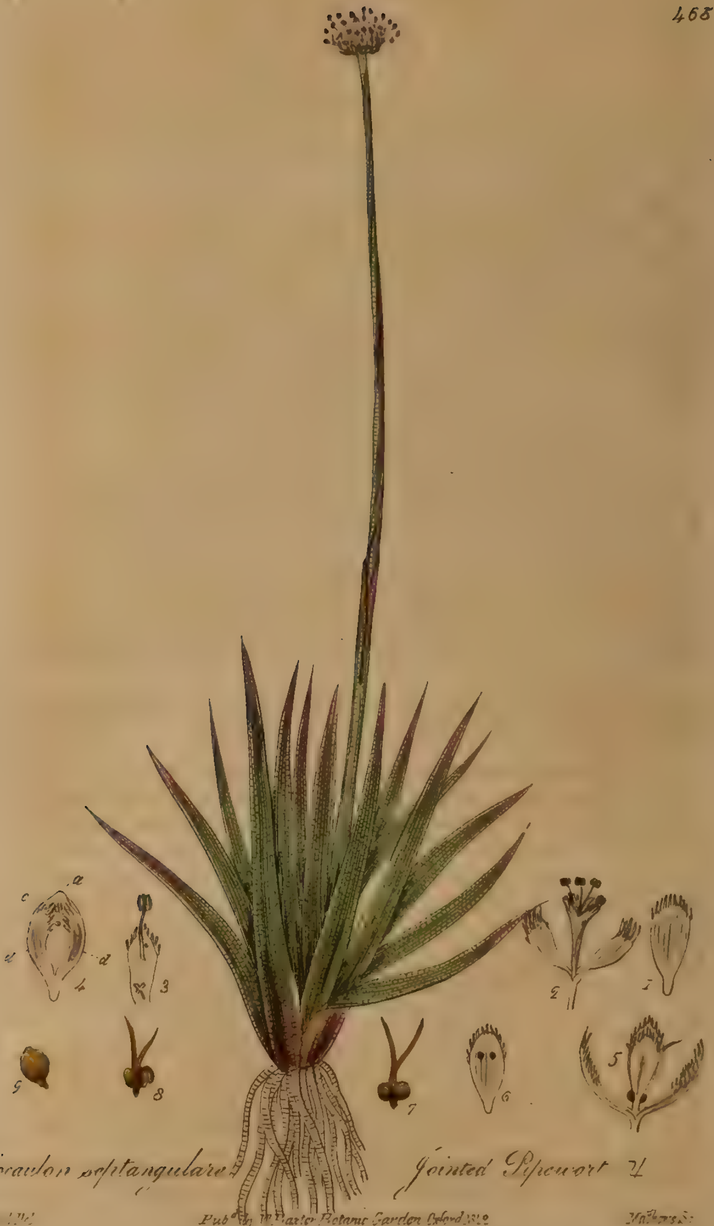
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Eriocaulon septangulare Jointed Pipewort ♃

Ray del. Pub. by W. Baxter Botanic Garden Oxford 18[illegible] Mathews Sc.

ERIOCAU'LON *.

Linnean Class and Order. MONŒ'CIA †, HEXA'NDRIA ‡

Natural Order. RESTIA'CEÆ, R. Brown's Prod. p. 243.—Lind. Syn. p. 272.; Intr. to Nat. Syst. of Bot. p. 283.—Rich. by Macgill. p. 396.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 288.—Hook. Brit. Fl. (4th edit.) p. 424.—JUNCI; sect. 1. Juss. Gen. Pl. pp. 43 & 44.—Sm. Gram. of Bot. p. 72.—JUNCALES; sect. JUNCINÆ; type, RESTIACEÆ; Burn. Outl. of Bot. v. i. pp. 403 & 416.—ENSATÆ, *Linn.*

GEN. CHAR. *Flowers* monœcious, collected into a compact, scaly head. *Scales* (see fig. 1.) 1-flowered, the exterior ones generally empty, and forming an involucrum. *Sterile Flowers* (see fig. 2.) in the centre. *Calyx* of 2 or 3 sepals. *Corolla* of 2 or 3 petals, united nearly to their summit. *Filaments* (see fig. 2.) 4 or 6, occasionally 3, from the upper part of the petals (see fig. 3), and a little longer, thread-shaped, upright. *Anthers* roundish, of 2 oblong cells. *Fertile Flowers* (see figs. 4 & 5.) in the circumference. *Calyx* (see fig. 4. *d, d.*) of 2 or 3 sepals. *Corolla* (see fig. 4, c. and fig. 5.) of 2 or 3 distinct petals. *Germen* (see fig. 7.) 2- or 3-lobed, superior. *Style* 1, very short. *Stigmas* 2 or 3, awl-shaped, pointed. *Capsules* (see fig. 8.) with 2 or 3 rounded lobes, and as many cells, bursting at the angles. *Cells* 1-seeded. *Seeds* (see fig. 9.) globular, albuminous, with an external embryo.

The compact head of flowers, with a scaly *involucrum;* the *sterile-flowers* in the centre, each with a *calyx* of 2 or 3 sepals, and a *corolla* of 2 or 3 petals connected nearly to the summit; the *fertile-flowers* in the circumference, each with a *calyx* of 2 or 3 sepals, and a *corolla* of 2 or 3 distinct petals; the single *style*, with 2 or 3 *stigmas;* and the *capsule* with 2 or 3 lobes, and 2 or 3, single-seeded, cells; will distinguish this from other genera in the same class and order.

One species British.

ERIOCAU'LON SEPTANGULA'RE. Seven-angled Pipewort. Jointed Pipewort. Wreathed Pipewort. Net-wort.

SPEC. CHAR. Scapes striated, about 7-angled, longer than the cellular, compressed, awl-shaped, smooth leaves. Head of Flowers convex. Sepals, Petals, and Scales, hairy at the extremities. Stamens four. Capsule 2-celled.

Engl. Bot. t. 733.—Hook. Fl. Lond. t. 52.—With. (1st ed.) v. ii. p. 784.—Sym. Syn. Pl. p. 41.—Sm. Fl. Brit. v. iii. p. 1010.; Engl. Fl. v. iv. p. 140.—With. (7th ed.) v. ii. p. 219.—Gray's Nat. Arr. v. ii. p. 158.—Lindl. Syn. p. 272.—Hook. Brit. Fl. p. 404.—Macr. Man. Brit. Bot. p. 244.—Ait. Hort. Kew. (2nd ed.) v. i. p. 183.—Hook. Fl. Scot. p. 270.—Irv. Lond. Fl. p. 285.—Mack. Catal. of Pl. of Irel. p. 81.; Fl. Hibern. p. 289.—*Eriocaulon decangulàre*, Lightf. Fl. Scot. v. ii. p. 569.—HOPE in Phil. Trans. v. lix. p. 243. t. 12.—Penn. Voy. to the Hebrid. v. i. t. 39. at p. 314.—With. (2nd ed.) v. ii. p. 1062.—*Nasmythia articulata.* Huds. Fl. Angl. (2nd ed.) p. 415.

Fig. 1. A Scale.—Fig. 2. A Sterile Flower.—Fig. 3. One of the Segments of ditto.—Fig. 4. A Fertile Flower; *a.* the Scale; *d, d.* Calyx; *c.* Corolla.—Fig. 5. A Fertile Flower expanded.—Fig. 6. A Petal of ditto, with 2 tubercles.—Fig. 7. Germen.—Fig. 8. Capsule.—Fig. 9. A Seed.—*All magnified;* fig. 9. *very highly so.*

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* From *erion*, Gr. *wool;* and *kaulos*, Gr. a *stem;* in allusion to the downy stems of the species first known, though not applicable to the British one.

† See folio 83, note †. ‡ See folio 92, note †.

Localities.—In Lakes in Scotland and the west coast of Ireland; rare.—SCOTLAND. *Inverness-shire;* First observed in the isle of Skye by Mr. Robertson, in 1768, according to Dr. Hope: but by the Rev. Dr. Walker's Herbarium, in Mr. Maughan's possession, it appears to have been discovered there, Sept. 11, 1764, by Sir John Macpherson, along with Dr. Walker, in a small lake by the road-side leading from Sconsar to Giesto. Sir John Macpherson, who saw it first, leaped from his horse, waded into the lake, and brought it out. See Hooker's *Fl Scot.* In two or three small fresh-water lochs, about a mile west of Loch-Sligachan, in the isle of Skye, but particularly in a small lake called Loch-na-Caiplich, close to the road-side between Sligachan and Drynoch, in such abundance that the white fibres of the roots are thrown upon the edges of the loch in the same manner as wrack and other weeds on the sea-shores: Lightfoot. In Skye, Coll, and a few of the neighbouring islands of the Hebrides: Sir W. J. Hooker.—IRELAND. On the edges of all the loughs, great and small, in Cunnamara; and it is to be met with in many places in the *county of Galway:* Dr. Wade; see *Memoir of* Sir J. E. Smith, v. ii p. 148. Very plentiful in many of the small lakes in Cunnamara; and in small ditches within four miles of Galway on the Oughterard road, and in several small lakes between Newport and Mount Nephin, *county of Mayo:* Mr. J. T Mackay. Abundant in the lakes of Rosses, *Donegal:* E. Murphy, Esq.

Perennial.—Flowers in August and September.

Roots creeping, with numerous, long, white, curiously jointed *fibres*, which penetrate deep into the mud. *Leaves* radical, numerous, channelled, smooth, two or three inches long, tapering gradually from a broadish base, to a hair-like point, and so pellucid as when held between the eye and the light to exhibit very distinctly their beautifully cellular internal structure. *Scape* from a few inches to nearly two feet high, with a tubular sheath at the base, solitary, simple, naked, beautifully cellular, a little twisted, having about seven angles, occasionally more or less, with flat interstices. *Flowers* numerous, minute, collected into a compact terminal *head;* each flower with an inversely egg-shaped, membranous, concave *scale* (fig. 1.), nearly as long as itself. *Calyx* of the *Sterile Flowers* (see fig. 2.) of 2 doubly-keeled, purplish sepals; *corolla* of 2 petals, which are white, and united for a great proportion of their length, so as to be 2-lipped at the extremity, each *lip* bearing a *stamen*, and above that a black sessile *gland* (see fig. 3.); and on each side, between the two lips a *stamen;* in the centre between these are two black stalked glands, (probably abortive *styles*). *Calyx* of the *Fertile Flower* (see fig. 4. *d, d.*) similar to that of the sterile one. *Corolla* (see fig. 4. *c.*) of 2 distinct petals, each with a black, sessile gland at the extremity. *Germen* of 2 globose lobes. *Style* short, *stigmas* 2, long, awl-shaped. See Sir W. J. Hooker's *Brit. Fl.*

This very curious plant is said to have been found in no other part of the world than in the habitats recorded above. The plants sometimes form large floating islands, by means of their densely matted roots; the heads of flowers and part of the scape alone rising above the water. The root is slightly acrimonious when chewed. *Eriocaulon decangulare* of Linnæus, is distinct from this, and has never yet been found wild in any part of Britain.

The *Natural Order* Restiaceæ, of which the present plant is the only British example, consists of *herbaceous plants* or *under shrubs*, either with simple, narrow *leaves*, or none. The flowers are generally aggregate, in heads or spikes, and are separated by scales (see fig. 1). The *perianthium* (see figs. 2, 4, & 5.) is inferior, and from 2- to 6-parted, seldom wanting. The *stamens* are definite, from 1 to 6. The *ovary* (see fig. 7.) is 1- or more-celled, each cell with one, pendulous, *ovule.* The *fruit* (see fig. 8.) is capsular or nut-like; and the *seeds* are inverted, and have a lenticular *embryo*, which is outside the albumen, and distant from the hilum.

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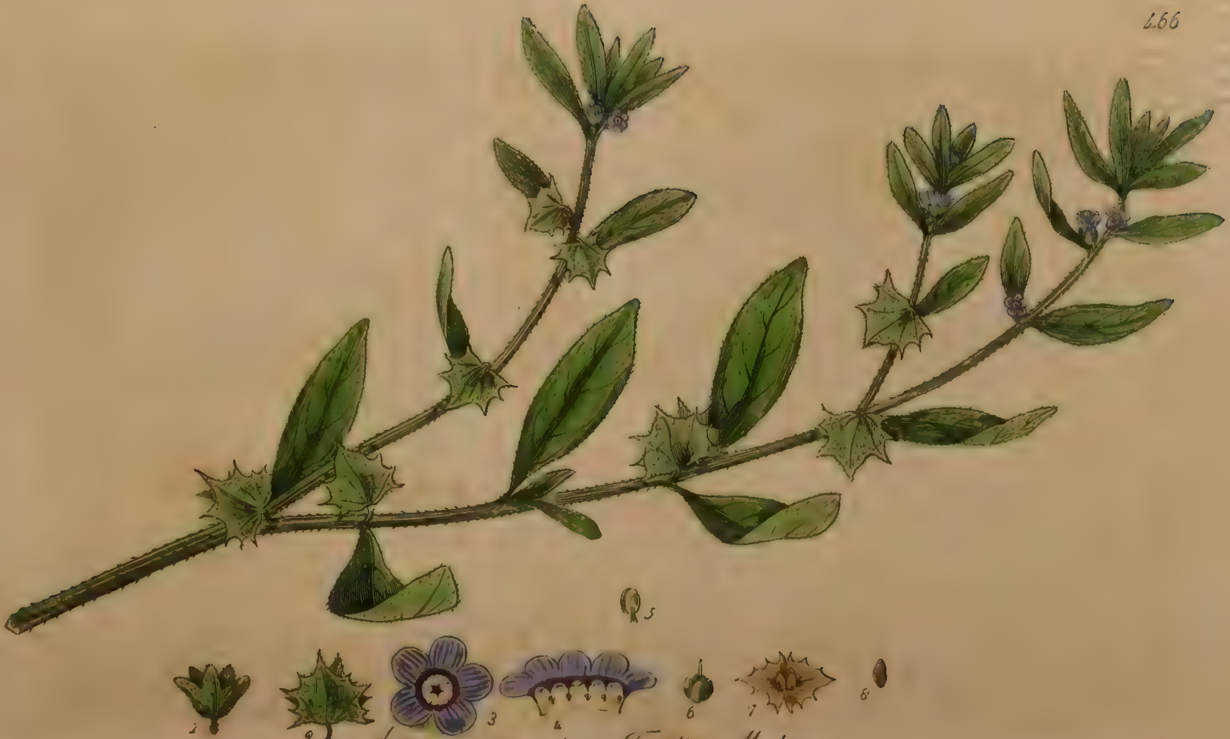

Asperugo procumbens. Trailing Madwort. ☉

Mathews Del & Sc.

Pub^d by W. Baxter, Botanic Garden Oxford 1842

ASPERU'GO [*].

Linnean Class and Order. PENTA'NDRIA [†], MONOGY'NIA.

Natural Order. BORAGI'NEÆ [‡], Juss. Gen. Pl. p. 128.—Sm. Gram. of Bot. p. 102.—Lindl. Syn. p. 163.; Introd. to Nat. Syst. of Bot. p. 241.—Rich. by Macgilliv. p. 440.—Loud. Hort. Brit. p. 527.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 306.—Mack. Fl. Hibern. p. 167.—Hook. Brit. Fl. (4th ed.) p. 413.—ASPERIFOLIÆ, *Linn.*—Sm. Engl. Fl. v. i. p. 247.—SYRINGALES; subord. PRIMULOSÆ; sect. SOLANINÆ; type, BORAGINACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 982 & 1005.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, divided half way into 5 small, nearly equal segments, permanent; subsequently enlarged, compressed, forming two upright, paralled, unequally sinuated and toothed, veiny lobes (see fig. 2). *Corolla* (figs. 3 & 4.) of 1 petal, funnel-shaped; tube cylindrical, very short; limb longer, in 5 rounded spreading segments; mouth closed by 5 convex, blunt scales, converging horizontally. *Filaments* (see fig. 4 & 5.) 5, very short, in the throat, alternate with the scales, and concealed by them. *Anthers* small, roundish, of 2 lobes. *Germens* (see fig. 6.) 4, compressed. *Style* (see fig. 6.) upright, the length of the tube. *Stigma* blunt. *Nuts* (see figs. 7 & 8.) 4, 1-celled, egg-shaped, compressed, smooth, not perforated at the base, fixed to the central column, which is 4-winged.

The 5-cleft, unequal *calyx*, with intermediate teeth; the short, funnel-shaped *corolla*, with its mouth closed by concave, converging scales; and the *nuts* covered by the doubled, compressed calyx; will distinguish this from other genera in the same class and order.

One species British.

ASPERU'GO PROCU'MBENS. Procumbent Madwort. German Madwort. Trailing Catch-weed. Great Goose-grass.

SPEC. CHAR.

Engl. Bot. t. 661.—Fl. Græc. v. ii. p. 65. t. 177.—Fl. Dan. t. 552.—Linn. Sp. Pl. p. 198.; Fl. Lapp. (2nd ed.) p. 50.—Huds. Fl. Angl. (2nd ed.) p. 82.—Willd. Sp. Pl. v. i. pt. II. p. 778.—Sm. Fl. Brit. v. i. p. 220.; Engl. Fl. v. i. p. 265.—With. (7th ed.) v. ii. p. 285.—Gray's Nat. Arr. v. ii. p. 351.—Lindl. Syn. p. 165.—Hook. Brit. Fl. p. 86.—Macr. Man. Brit. Bot. p. 162.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 357.—Lamark and De Cand. Fl. Fr. v. iii. p. 634.—Lightf. Fl. Scot. v. i. p. 135.—Relh. Fl. Cant. (3rd ed.) p. 83.—Hook. Fl. Scot. p. 70.—Grev. Fl. Edin. p. 46.—Johnst. Fl. of Berw. v. i. p. 54.—Winch's Fl. of Northumbl. and Durh. p. 12.—Bab. Fl. Bath. p. 33.—Irv. Lond. Fl. p. 137 —Leight. Fl. Shropsh. p. 100.—*Asperugo vulgaris*, Ray's Syn. p. 228.—Blackst. Sp. Bot. p. 5.—

Fig. 1. Calyx of the Flower.—Fig. 2. Calyx of the Fruit.—Fig. 3. Corolla.—Fig. 4. Corolla opened vertically to show the Scales, and the Stamens.—Fig 5. A separate Stamen.—Fig 6. Germens, Style, and Stigma.—Fig. 7. The permanent Calyx, and 4 Nuts.—Fig. 8. A separate Nut.—*All magnified.*

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[*] From *asper, rough*; from the roughness of its leaves and stems; by which it adheres to whatever it touches.

[†] See folio 48, note †.

[‡] See folio 102, [illegible]

Aparine major Plinii, Johnson's Gerarde, p. 1122, with a figure.—*Cynoglossa topiaria forte Plinii*, Bauh. Hist. v. iii. p. 601, with a figure. The same cut is put in the preceding page, for *C. folio virente*.—*German Madwort*, Petiv. H. Brit. t. 29. f. 12.

Localities.—In roads, waste plates, on dunghills, and among rubbish; rare.—*Cambridgeshire;* In the hedge of a lane leading to Newmarket, near the church which stands by the King's House, and in the close by the church-yard: Rev. R. Relhan. It used to grow near Newmarket, but has not been found there for many years: Rev. J. Hemsted.—*Dorset;* Chalky roads by the way-side, but I have forgotten the place: Rev. G. Crabbe, in B. G.—*Essex;* Near Purfleet: Mr. Alchorn, in "Huds. Fl. Angl." Warner, in his "Plantæ Woodfordiensis," p. 19, has introduced this as an Essex plant, but from his reference to Ray, it is clear that he meant *Lycopsis arvensis;* see t. 21.—*Northumberland;* In the Holy Island: Ray. On Bamborough Castle, and on rubbish by the road-side below it: Miss Nevison & Miss Forster, in "Fl. of Northumb."—*Shropshire;* In a field near the confluence of the rivers Corve and Teme, Ludlow: Dr. Evans. Gathered in the same locality since, by Dr. Joseph Babington: N. B. G.—*Somersetshire;* In the corn-fields near Bath: Mr. Hill, in "Blackst. Sp. Bot."—*Suffolk;* At Wangford, near Brandon: Mr. F. Eagle, jun. in B. G. About the church at Newmarket: Rev. R. Relhan. —*Sussex;* Near Boxley: Ray.—WALES. *Caernarvonshire;* North side of Llandido Rocks, as you descend down to the Llêch; in a most perilous situation, and certainly wild: Mr. Griffith, in B. G.—SCOTLAND. *Berwickshire;* In the Holy Island: Ray. On Bamburgh Castle, confined to a small spot: Miss Nevison, "Fl. of Berw."—*Forfarshire;* Near to the town of Achmithie; and also at the village of Westhaven: Mr. G. Don, in Headrick's "Agricul. of Forfarshire," p. 31.—? *Elginshire;* Burghead: G. Gordon, in N. B. G.—*Haddingtonshire;* By the church at Dunbar: Dr. Parsons, in "Lightf. Fl." Plentifully among the ruins of the Castle at Dunbar, in 1808: Sir W. J. Hooker, in "Fl. Scot." Guillon Links: Messrs. Arnott and Stewart, in "Fl. Edin." Near Luffness, in a neglected field: N. B. G.

Annual,—Flowers in April and May.

Root small, tapering. *Stems* procumbent, branched, square, leafy, from 1 to 2 feet long, their angles beset with small, hooked spines or bristles. *Leaves* alternate, nearly opposite, or sometimes 3 or 4 from nearly the same point of the stem, oblong-spear-shaped, the lower ones petiolate, (stalked,) all clothed with hispid hairs on both surfaces, and having the margin and mid-rib furnished with bristly hairs, which point forwards. *Flowers* small, axillary, solitary, on very short peduncles, which are upright at first, but afterwards curve downwards. *Calyx* (fig. 1.) small, hairy, becoming much larger after flowering (see figs. 2 & 7). *Corolla* (fig. 3 & 4.) with a short, cylindrical, white tube; rounded, blue segments; and white or reddish scales. *Seeds* whitish, finely granulated.

This plant is a native throughout Europe and Siberia, by way-sides, hedges, on walls, and among rubbish.—Horses, goats, sheep, and swine are said to eat it; cows are not fond of it.

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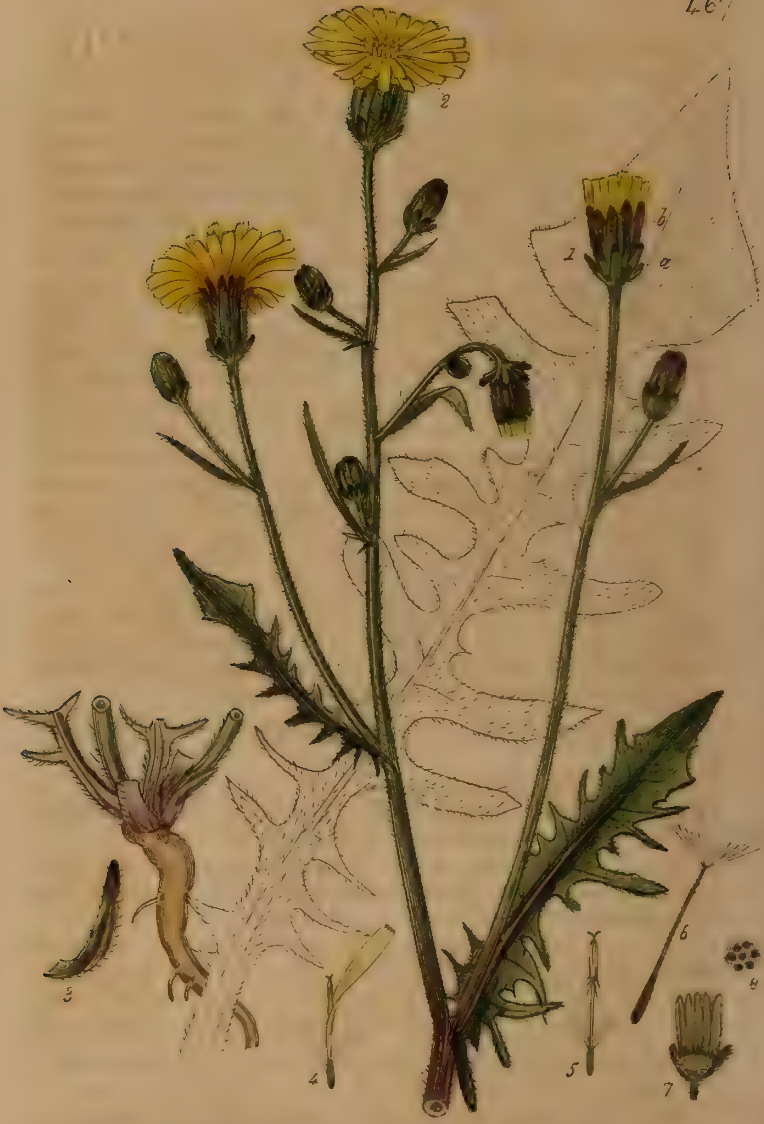
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Borkhausia fœtida. Stinking Borkhausia. ♂

Mathews del 450

Pub d by W. Baxter Botanic Garden Oxford 1842.

BORKHA'USIA[*].

Linn. Class & Order. SYNGENE'SIA[†], POLYGA'MIA, ÆQUALIS[‡].

Natural Order. COMPO'SITÆ[§], *(Linn.)*, tribe, CICHORA'CEÆ, Lindl. Syn. pp. 140 & 156.; Introd. to Nat. Syst. of Bot. pp. 197 and 201.—Loud. Hort. Brit. pp. 520 & 521.—Mack. Fl. Hibern. pp. 142 & 159.—Hook. Brit. Fl. (4th ed.) p. 410.—CICHORA'CEÆ, Juss. Gen. Pl. p. 168.—Sm. Gr. of Bot. p. 120.—SYNANTHE'REÆ, Rich. by Macgilliv. p. 454.—SYRINGALES; subord. ASTEROSÆ; type, CICHORACEÆ; Burn. Outl. of Bot. pp. 900, 901, & 935.

GEN. CHAR. *Involucrum (common caly)* (see fig. 1.) double, outermost (fig. 1, *a.*) of a few short, awl-shaped, deciduous scales, at length ribbed and furrowed (fig. 3.); inner (fig. 1, *b.*) oval, simple, furrowed, permanent, of several, strap-shaped, converging scales. *Corolla* (fig. 2.) compound, of numerous, imbricated, uniform, perfect, strap-shaped, blunt, 5-toothed *florets* (see fig. 4). *Filaments* (see fig. 5.) 5, hair-like, very short. *Anthers* (see fig. 5.) in a cylindrical tube. *Germen* (see fig. 5.) inversely egg-oblong. *Style* (see fig. 5.) thread-shaped, slightly prominent. *Stigmas* 2, spreading *Seed-vessel* none, except the converging, hardened, inner calyx. *Seed* (see fig. 6.) transversely wrinkled, with a long awl-shaped beak. *Pappus* (see fig. 6.) hair-like, copious, stipitate. *Receptacle* (see figs. 7 & 8.) naked, or very slightly hispid, flattish.

The *involucrum* with awl-shaped scales at the base; the transversely wrinkled *seed*, with a long awl-shaped beak; the hairy, stipitate *pappus;* and the naked or very slightly hispid, flattish *receptacle;* will distinguish this from other genera, with uniform strap-shaped florets, in the same class and order.

It differs from *Crepis*, t. 366, in the *pappus* being stipitate, not sessile.

One species British.

BORKHA'USIA FŒTIDA. Fetid Borkhausia. Stinking Hawk's-beard. Stinking Castor-weed. Cotton Groundsel.

SPEC. CHAR. Stem hairy. Leaves hairy, sessile, pinnatifid, with reversed teeth; upper ones spear-shaped, cut at the base. Involucrum downy.

BORKHAUSIA FŒTIDA. Hook. Brit. Fl. 1st ed. p. 347.; 4th ed. p. 293.—*Barkhausia fœtida*, Lam. et Decand. Fl. Fr. (3rd edit.) v. iv. p. 42.—Gray's Nat. Arr. v. ii. p. 426.—Lindl. Syn. p. 158.—Macr. Man. Brit. Bot. p. 143.—*Crepis fœtida*, Engl. Bot. t. 406.—Linn. Sp. Pl. p. 1133.—Huds. Fl. Angl. (2nd ed.) p. 339.—Willd. Sp. Pl. v. iii. pt. III. p. 1598.—Sm. Fl. Brit. v. ii. p. 837.; Engl. Fl. v. iii. p. 370.—With. (7th ed) v. iii. p. 900.—Relh. Fl. Cant. (3rd ed.) p. 323.—Winch's Fl. of Northumb. and Durh. p. 51.—Irv. Lond. Fl. p. 151.—*Hieracium Castorei*

Fig. 1. Involucrum; *a.* outer Scales; *b.* inner ditto.—Fig. 2. Corolla.—Fig. 3. An outer Scale of the Involucrum.—Fig. 4. A separate Floret.—Fig. 5. Stamens and Pistil.—Fig. 6. A Seed, with its stalked Pappus.—Fig. 7. Receptacle.—Fig. 8. A small portion of ditto.—Figs. 3, 4. 5, 6, & 8, *more or less magnified.*

[*] So named in honour of MORITZ BORKHAUSEN, a German Botanist.

[†] See fol. 91, note †. [‡] See fol. 147, note ‡. [§] See fol. 27, *a.*

odore Monspeliensium, Ray's Syn. p. 165.—*Hieracium luteum, cichorii sylvestris folio, amygdalas amaras olens*, Moris. v. iii. p. 63. sect. 7. t. 4. f. A.—*Hieracium folus cichorei sylvestris villosis, odore castorei*. Magnol. Bot. Monsp. p. 129.—Blackst. Sp. Bot. p. 36.—*Erigeron tomentosum alterum*, Johnson's Gerarde, p. 279, with a figure.—*Castor Hawkweed*, Petiv. H. Brit. t. 12. f. 8.

LOCALITIES.—On dry chalky ground; rare.—*Cambridgesh.* Dry pastures between Little Shelford and Wittlesford: REV. R. RELHAN. Devil's Ditch: HOOKER, in N. B. G.—*Durham;* Sunderland Ballast Hills: N. J. WINCH, Esq.—*Essex;* Chalk-pits at Purfleet: Mr. E. FOSTER, jun.—*Kent;* Charlton Chalk-pits: PETIVER. Northfleet Chalk-pits: BLACKSTONE. Near Greenhithe: HUDSON. Near Rochester: N. J. WINCH, Esq. Dartford: Mr. JAMES MACNAB, in N. B. G.—*Norfolk;* Near Swaffham: Mr. PITCHFORD. At Barton Bendish, and Beechamwell, in several places: DAWSON TURNER, Esq.—*Northumberland;* On St. Anthon's and Willington Ballast-hills: N. J. WINCH, Esq.—*Suffolk;* About Claydon, and Coddenham: Rev. G. CRABBE. Near the six-milestone from Bury to Newmarket: and at Great Saxham: Sir T. G. CULLUM.—*Surrey;* Among the corn by the side of the road from Banstead Downs to Dorking: MARTYN Field behind Juniper Hill, and about old stone-quarries west of Dorking: N. J. WINCH, Esq.—In *Sussex;* W. BORRER, Esq. N. B. G.

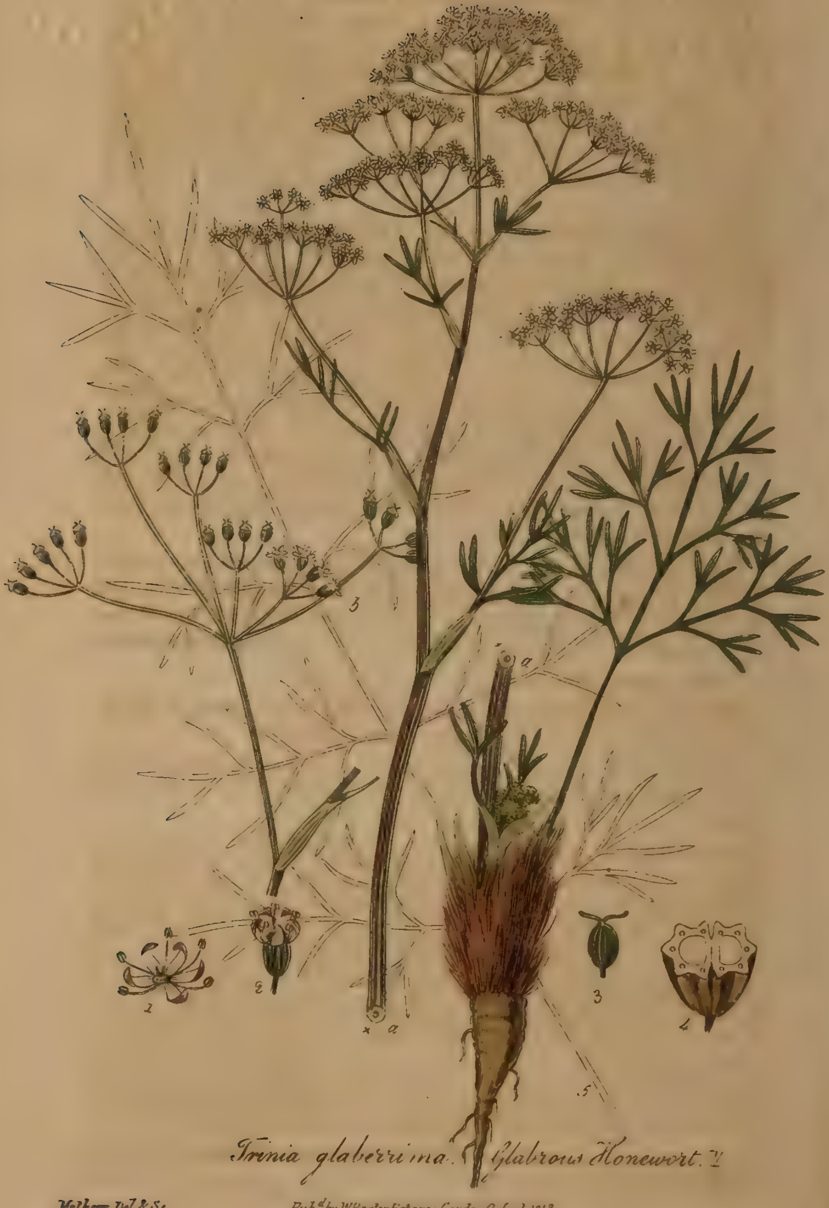
Biennial.—Flowers in June and July.

Root spindle-shaped. *Stems* several, spreading, a foot or more high, the central one only being quite upright; all cylindrical, solid, rough with projecting hairs, grooved, leafy, and more or less branched. *Leaves* deeply and unequally pinnatifid, running down into winged and toothed *footstalks;* the terminal lobe large, triangular, acute; side ones broader above, the lowest strap-shaped, a little curved, all toothed, hoary-green, hairy, and rough. *Flowers* several, small, yellow, solitary, on long, furrowed, rough stalks, nodding before they open. *Outer scales* of the involucrum (fig. 1, *a.*) few, spear-shaped, shrinking as the flower fades; *inner* (fig. 1, *b.*) strap-shaped, parallel, hairy, and downy, hardened by age, and permanently erect. *Corolla* pale yellow; of a delicate reddish colour underneath. *Seeds* (fig. 6.) tawney, furrowed, very long and slender. *Pappus* (see fig. 6.) simple, roughish, on a long rough stalk. *Receptacle* (see figs. 7 & 8.) furnished with short hairs, fringing its shallow cells.—The whole herb is very milky.

It is remarked by VILLARS, that this plant varies in size, form, colour, and smell; but that in all the varieties the *root* is fusiform (spindle-shaped); the *stem* rough, channelled, and branched; the *leaves* ash-coloured, and more or less indented at the base; that it has commonly the smell of bitter almonds, especially the *involucrum,* when bruised; that the *florets* are red on the outside; the *seeds* fusiform; and the *pappus* on a stipe.

TOURNEFORT and LINNÆUS attribute the smell of bitter almonds to the leaves; HALLER more justly gives the plant a bituminous scent. RAY says that it has a strong scent of Castor; and MARTYN, that the flowers always seemed to him to have the smell of Opium.

It is a native of France, Germany, Switzerland, Austria, and Piedmont, as well as of England. (See *Sm. Engl Fl.;* and *Mart. Mill. Gard. Dict.*)



Trinia glaberrima. Glabrous Honewort. V

Mathews Del. & Sc

Pub.d by W. Baxter Botanic Garden Oxford [illegible]

TRI'NIA *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, and 774.

GEN. CHAR. *Flowers* (see figs. 1 & 2.) diœcious. *Calyx* an obsolete margin. *Petals* of the *sterile plant* (see fig. 1. & *a.*) spear-shaped, with a narrow involute point; of the *fertile* or *hermaphrodite plant* (see fig. 2. & *b.*) egg-shaped, with a short inflexed point. *Filaments* (fig. 1.) 5, hair-like, spreading, longer than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, a little compressed, smooth, finely ribbed. *Styles* (see fig. 3.) 2, thread-shaped, somewhat spreading, short in the flower, afterwards as long as the fruit, tumid at the base. *Stigmas* capitate, almost globular. *Fruit* (see figs. 3 & 4.) egg-shaped, compressed at the side. *Carpels* with 5 prominent equal ribs, and single *vittæ* beneath them. *Seed* convex, flattish in front.—*Involucrum* various.—*Flowers* white.

The diœcious *flowers;* the obsolete *calyx;* the spear-shaped, involute *petals;* the egg-shaped, compressed, smooth *fruit;* and the *carpels* with 5 prominent ribs, and single *vittæ* beneath them; will distinguish this from other genera in the same class and order.

One species British.

TRI'NIA GLABE'RRIMA. Smooth Honewort. Smooth Rock-parsley. Dwarf Burnet-saxifrage. Least Anise.

SPEC. CHAR. Plant glabrous. Leaves bipinnate; leaflets strap-spear-shaped, short, equal. Involucrum none. Ribs of the fruit obtuse.

Hoffm. Umb. p. 93.—Gray's Nat. Arr. v. ii. p. 512.—Lindl. Syn. p. 124.—Hook. Brit. Fl. p. 128.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 281.—Mack. Fl. Hibern. p. 123—*Trínia vulgáris*, Macr. Man. Brit. Bot. p. 97.—*T. vulgaris β. Jaquini*, Decand. Prod. v. iv. p. 103.—*Pimpinella dioica*, Engl. Bot. t. 1209—Linn. Syst. Veg. (13th ed.) p. 241.—Huds. Fl. Angl. (2nd ed.) p. 128.—Willd. Sp. Pl. v. i. pt. II. p. 1474.—Sm. Fl. Brit. v. i. p. 332.; Engl. Fl. v. ii. p. 90.—With. (7th ed.) v. ii. p. 396.—Walker's Fl. of Oxf. pp. 83 and 304.—Irv. Lond. Fl. p. 235.—*Pimpinélla púmila*, Jacq. Hort. Vind. p. 52. t. 227.; Fl. Austr. v. i. p 19. t. 28.—*Pimpinélla glaúca*, Spreng. Syst. v. i. p. 883.—*Séseli púmilum*, Linn. Sp. Pl. p. 373.—*Peucedanum minus*, Bauh. Pin. p. 149.—Park. Theatr. Bot. p. 880. 3.—Ray's Syn. p. 217.—Huds. Fl. Angl. (1st ed.) p. 101.—*Peucedanum*

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a, a. A Sterile Plant; *b.* Umbel of a Fertile Plant.—Fig. 1. A Flower of a Sterile Plant.—Fig. 2. A Flower of a Fertile Plant.—Fig. 3. A Fruit.—Fig. 4. Transverse section of a Fruit.—Fig. 5. Leaf of a Sterile Plant.—Figs. 1, 2, 3, & 4, *magnified.*

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* So named in honour of Dr. TRINIUS, a celebrated Russian Botanist, who has written on Gramineæ. DON.

† See folio 48, note †.

‡ See folio 235, *a.*

pumilum, Johnson's Gerarde, p. 1054, with a figure.—*Selinum montanum, pumilum*, Clus. Hist. v. ii. p. 200.—Bauh. Hist. v. iii. pt. II. p. 17. f. at 18.—*Saxifraga montana minor, foliis peucedani*, Moris. v. iii. p. 274. sect. 9. t. 2. f. 15.

Localities.—On limestone rocks, and in mountainous pastures; but rare.—*Gloucestersh.* On St. Vincent's Rock near Bristol: Ray, and N. J. Winch, Esq.—*Herefordsh.* In the centrical part of the county; Duncumb, in "Hist. of Herefordshire."—*Somersetsh.* At Uphill; and Whorle Hill: "Engl. Fl."—WALES. On Llandidno Rocks: Mr. Griffiths, in B. G.—IRELAND. In pastures near the church of Athboy, county of Meath, in great abundance: Dr. Wade.

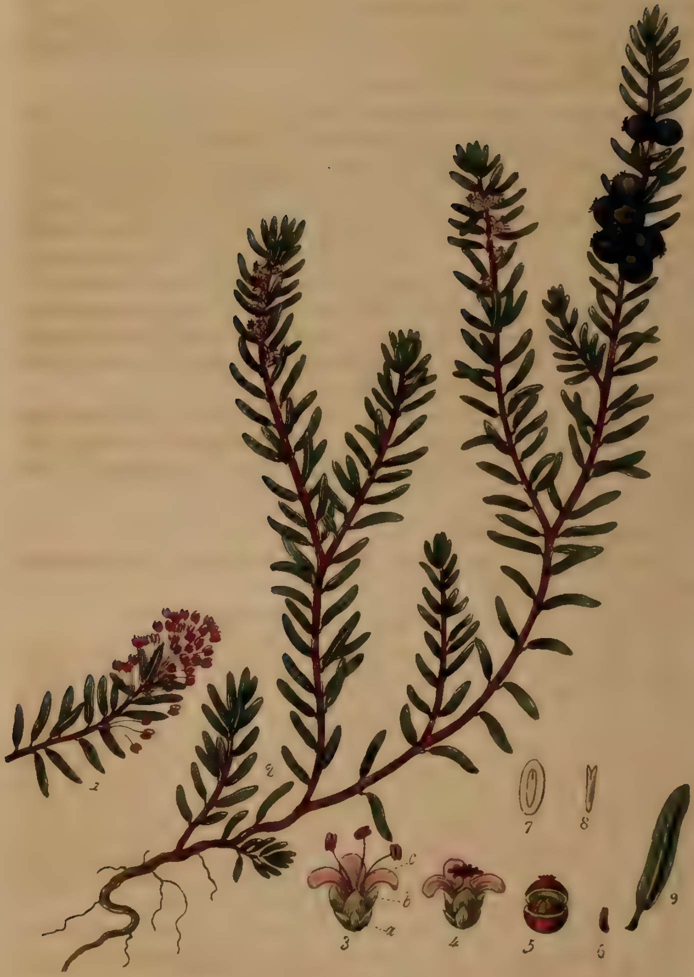
Perennial.—Flowers in May and June.

Root tapering, fleshy, bearded at the top with the fibrous remains of the old leaf-stalks. *Sterile plants* (see fig. *a, a.*) most humble in size, and less spreading; *fertile ones* (see fig. *b.* and fig. 5.) about a foot high. *Stem* upright, angular, striated, leafy, smooth, often purplish, very much branched, branches spreading. *Leaves* oblong, doubly pinnate; radical ones on long petioles, the rest with only short, dilated, membranous ones; *leaflets* uniform, strap-spear-shaped, or quite strap-shaped, entire; three occasionally combined at the end of the leaf. *Umbels* numerous, simple or compound, panicled, upright, without either *general* or *partial involucrums*. *Rays* angular, smooth. *Flowers* yellowish or whitish, numerous, small; the *sterile* ones (see fig. 1.) mostly without even the rudiments of a *germen;* the *fertile* ones (fig. 2.) furnished with imperfect *anthers*. *Petals* long-spear-shaped, incurved, not notched. *Filaments* (see fig. 1.) long, white. *Stigmas* capitate, almost globular. *Fruit* (figs. 3 & 4.) elliptic egg-shaped, often deprived of the *styles*, which, when permanent, are small and inconspicuous.

The whole *herb* is smooth, and of a sea-green colour. It is a native of Western and Central Europe. Its qualities somewhat resemble those of *Pimpinella saxifraga*, t. 411.

There lives and works
A soul in all things, and that soul is God.
The beauties of the wilderness are his,
That make so gay the solitary place,
Where no eye sees them. And the fairer forms
That cultivation glories in are His.
He sets the bright procession on its way,
And marshals all the order of the year;
He marks the bounds which winter may not pass,
And blunts his pointed fury; in its case,
Russet and rude, folds up the tender germ,
Uninjured, with inimitable art;
And ere one flowery season fades and dies,
Designs the blooming wonders of the next.

Cowper.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Empetrum nigrum Black Crow-berry: ♄

Mathews. Del. & Sc.   Pub.d by W. Baxter, Botanic Garden Oxford. 1842

E'MPETRUM *.

Linnean Class and Order. DIŒ'CIA †, TRIA'NDRIA ‡.

Natural Order. EMPE'TREÆ, *Nuttall.*—Lindl. Syn. p. 224; Introd. to Nat. Syst. of Bot. p. 109.—Loud. Hort. Brit. p. 535.; Arb. et Frutic. Brit. v. iv. p. 2506.—Mack. Fl. Hibern. p. 237.—Hook. Brit. Fl. (4th ed.) p. 418.—ERICÆ; sect. 3. Juss. Gen. Pl. pp. 159 and 162.—Sm. Gr. of Bot. p. 115.—QUERNEALES; sect. EUPHORBINÆ; type, EMPETRACEÆ; Burn. Outl. of Bot. pp. 523, 600, and 611.—MISCELLANEÆ; *Linn.*

GEN. CHAR. *Sterile Flowers* (see fig. 1 & 3.). *Calyx* (see fig. 3, *b.*) of 3, egg-shaped, coriaceous, permanent sepals, with imbricated scales (fig. 3, *a.*) at the base. *Corolla* (see fig. 3, *c.*) of 3, sometimes more, oblong petals, contracted at the base, larger than the sepals, withering. *Filaments* (see fig. 3.) 3, hair-like, long, pendulous. *Anthers* roundish, deeply cloven, of 2 cells.—*Fertile Flowers* (see figs. 2 & 4). *Calyx* and *Corolla* as in the sterile flowers. *Germen* superior, orbicular, depressed. *Style* (see fig. 4.) simple, upright, very short. *Stigmas* 6 to 9, oblong, spreading. *Fruit* (fig. 5.) succulent, orbicular, depressed, wider than the calyx, with from 6 to 9, upright, triangular seeds (see fig. 6.), closely disposed in a circle, gibbous externally.

The *calyx* of 3 sepals; the *corolla* of 3 petals; the hair-like *filaments*; the 6- to 9-cleft *stigma*; and the superior *berry*, with from 6 to 9 *seeds*; will distinguish this from other genera in the same class and order.

One species British.

E'MPETRUM NI'GRUM. Black Crow-berry. Crake-berry. Black-berried Heath.

SPEC. CHAR. Stems trailing. Leaves linear-oblong.

Engl. Bot. t. 526.—Fl. Dan. t. 975.—Mill. Illustr. t. 86.—Linn. Sp. Pl. p. 1450.—Huds. Fl. Angl. (2nd ed.) p. 431.—Willd. Sp. Pl. v. iv. pt. II. p. 713.—Sm. Fl. Brit. v. iii. p. 1072.; Engl. Fl. v. iv. p. 233.—With. (7th ed.) v. ii. p. 210.—Gray's Nat. Arr. v. ii. p 402.—Lindl. Syn p. 224.—Hook. Brit. Fl. p. 434.—Loud. Arb. et Frutic. Brit. v. iv. p. 2507. figs. 2375 and 2376.; Encycl. of Trees and Shrubs, p. 1091. f. 2035 and 2036.—Macr. Man. Brit. Bot. p. 205.—Lightf. Fl. Scot. v. ii. p. 612.—Thomp. Pl. of Berw. p. 96.—Purt. Midl. Fl. v. ii. p. 746.—Hook. Fl. Scot. p. 287.—Grev. Fl. Edin. p. 209.—Johnst. Fl. of Berw. v. i. p. 218.—Winch's Fl. of Northumb. and Durh. p. 64.—Burnett's Outl. of Bot. v. ii. pp. 611 & 612.—Perry's Pl. Varvic. Sel. p. 79.—Dick. Fl. Abred. p. 58.—Irv. Lond. Fl. p. 290.—Baines' Fl. of Yorksh. p. 90.—Leight. Fl. of Shropsh. p. 490.—Mack. Cat. Pl. of Irel. p. 85.; Fl. Hibern. p. 238.—*Empetrum montanum, fructu nigro,* Ray's Syn. p. 444.—*Erica baccifera procumbens,* Johns. Ger. p. 1383, with a fig.—*Erica coris folio undecima,* Clus. Hist. v. i. p. 45, with a figure.

Fig. 1. Sterile Plant.—Fig. 2. Fertile Plant.—Fig. 3. A staminiferous Flower; *a.* Scales; *b.* Calyx; *c.* Corolla.—Fig. 4. A pistilliferous Flower.—Fig. 5. Fruit.—Fig. 6. A Seed.—Fig. 7. Section of a Seed.—Fig. 8. Embryo.—Fig. 9. A Leaf.—*All,* except figs. 1, 2, and 6, *magnified.*

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* From *en, upon;* and *petros, a rock;* in allusion to the place of growth.

† See fol. 143, note †.

‡ See fol. 90, note †.

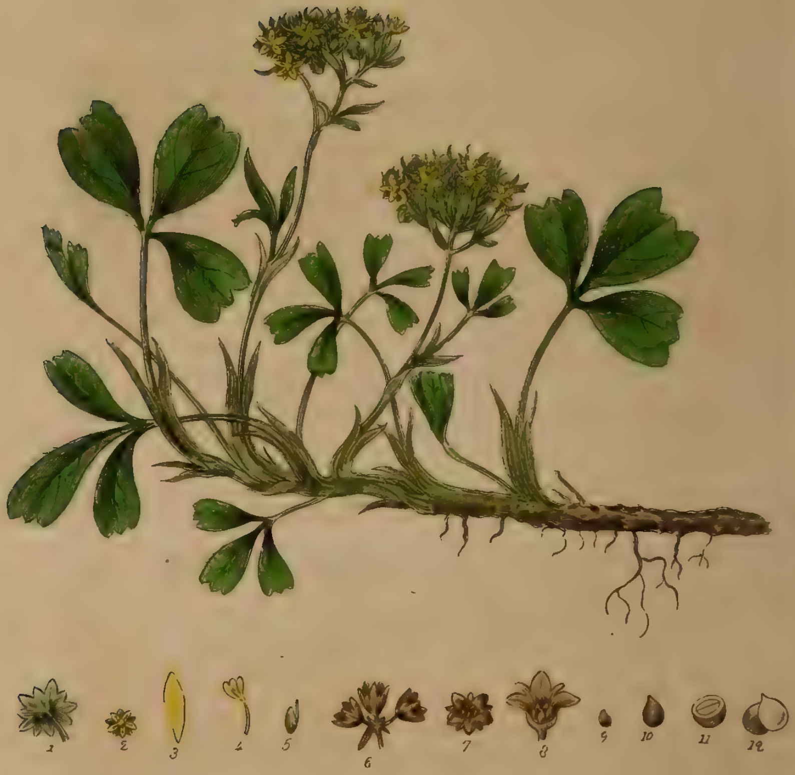
Localities.—On mountainous heaths in the North, abundantly, both in the driest and most barren rocky soils, and in bogs and moorish grounds.—*Cheshire;* Stayley and other moors, common: B. G. Mole-Cop, and other hills near Congleton: N. B. G.—*Cumberland;* Cross Fell; Kirkhouse; Brampton; Skiddaw; Causey Pike; and Styhead. It is frequent on the hills, ascending to the top of Saddleback: N. B. G.—*Derbysh.* Moors beyond Mam Tor and Win Hill, from Castleton: N. B. G. Moors above Buxton; and near Chapel en le Frith: B. G.—*Durham;* On moors, frequent: B. G.—*Herefordsh.* In the northern parts of the county: B. G.—*Northumberland;* On moors, frequent: N. B. G.—*Notts;* Sherwood Forest, near Mansfield; in a fir plantation two miles from Mansfield; Fountain Dale; Oxton Bogs; and Nottingham Meadows: N. B. G.—*Shropsh.* On Selattyn Mountain; Bog near Ellesmere; Stiperstones Hill; Castle Ringhills, near Stiperstones; and Shomere Moss, near Shrewsbury; *Fl. of Shrop.*—*Staffordsh.* On the bog at Willow Bridge: B. G. Molecop, and adjacent hilly moors; and on Chartley Moss: N. B. G.—*Sussex;* Amberley Wild Brooks; Newberry, on the Greatham side of the ditch that bounds the two parishes, but in very small quantities: N. B. G.—*Warwicksh.* Sutton Coldfield: Bree.—*Westmoreland;* Hay Fell: N. B. G.—*Yorksh.* Seamer Moor, and other moors near Scarbro'; Black Moor, above Kirkby Knowle; on all the moors near Settle; Cotherstone Fell; Cronkley Fell, &c. On Otley Chevin On all the high moors in the neighbourhood of Halifax: *Fl. of Yorksh.*—Common in the mountainous parts of WALES, SCOTLAND, and IRELAND.

Shrub.—Flowers in April.

A small, low, trailing, shrubby plant, with numerous, leafy, partly ascending, reddish branches, clothed more or less with minute stipitate glands. *Leaves* crowded, scattered, or imperfectly whorled; linear-oblong, blunt, on short petioles; upper surface smooth, shining; under surface with scattered minute dots or glands, margins with a dense downy fringe, and so much recurved as to meet behind, the fringe forming a white, strap-shaped, streak; these characters may be best seen by making a transverse section of a leaf. *Flowers* purplish, small, axillary, solitary, almost sessile, several near together towards the summits of the branches, generally diœcious, sometimes united, or partially monœcious. *Berries* purplish-black, globose, of the size of Juniper-berries, accompanied at the base by the permanent calyx; flesh rather firm, of a pale green, except in the centre, where it is purplish; receptacle columnar, slender, with from 6 to 9 bony pale-coloured seeds fixed round it in a ring, and attached to it a little above the base (see fig. 5).

This little Heath-like plant is a native of other northern parts of Europe as well as of Britain. It is found in moors, from the Baltic to the Eastern Ocean, in Kamtschatka, and in the islands towards America. In the mountains of Lapland, and at the mines of Fahlun it will live where other plants perish with cold. The Scotch Highlanders and the Russian peasants eat the berries, which are esteemed antiscorbutic and diuretic; but they are no very desirable fruit, and if taken in large quantities, occasion head-ache. Grouse and heath-cocks feed on them; and, boiled in alum-water, they afford a dark purple dye. In Iceland and Norway a sort of wine is prepared from them; and Linnæus mentions, that the Laplanders use them for dying otter and sable skins black. In Orkney very strong ropes are made from the shoots of this plant. It is the badge of the clan M'Lean.—See *Mart. Mill.; Burn. Outl. of Bot.; Loud. Arbor. et Frut. Brit.; & Hook. Brit. Fl.*

The *Natural Order* Empe'treæ is composed of dwarf heath-like shrubs, with diœcious *flowers* composed of a *perianthium* of several hypogynous scales (see figs. 3 & 4.), often arranged in two rows; the *stamens* equal in number to the inner row. The *ovary* is free, on a fleshy disk; with a single *style;* and a *stigma* with as many divisions as there are cells. The *fruit* is fleshy, with 3, 6, or 9 bony cells, each containing a single *seed,* ascending, with *albumen.*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Sibbaldia procumbens *Procumbent Sibbaldia* ♃

Ruſsell Del. Pub^d by W. Baxter, Botanic Garden Oxford 1839 Mathews. Sc

SIBBA'LDIA *.

Linnean Class and Order PENTA'NDRIA †, PENTAGY'NIA.

Natural Order. ROSA'CEÆ ‡, Juss. Gen. Pl. p. 334.—Sm. Gram. of Bot. p. 171.—Lindl. Syn. p. 88.; Introd. to Nat. Syst. of Bot. p. 81.—Rich. by Macgilliv. p. 528.—Loud. Hort. Brit. p. 512.; Arbor. et Frutic. Brit. v. ii. p. 670.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 523.—Mack. Fl. Hiber. p. 85.—Hook. Brit. Fl. (4th ed.) p. 404.—ROSALES; sect. ROSINÆ; subsect. ROSIANÆ; type, ROSACEÆ; subtype, FRAGARIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 683, 699, & 700.—SENTICOSÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 10 alternately large and small segments, permanent. *Corolla* (see fig. 2.) of 5, inversely egg-shaped petals (see fig. 3.), tapering at the base, inserted into the rim of the calyx, shorter than its smaller segments, to which they are opposite. *Filaments* 5, awl-shaped, shorter than the petals, inserted into the rim of the calyx between them. *Anthers* (fig. 4.) roundish, incumbent. *Germens* (see figs. 5 & 7.) 5, occasionally 10, egg-shaped, compressed, very short. *Styles* lateral, from about the middle of the germen (see fig. 5.), as long as the stamens. *Stigmas* blunt. *Capsules (seeds* of SM.*)* (see figs. 9 & 10.) 5, indehiscent, in the bottom of the enlarged, somewhat hardened, converging calyx, 1-seeded.

The *calyx* in 10 alternately large and small segments; the *corolla* of 5 petals, inserted on the calyx; and the 5 indehiscent, 1-seeded *capsules;* will distinguish this from other genera in the same class and order.

One species British.

SIBBA'LDIA PROCU'MBENS. Procumbent Sibbaldia. Scotch Cinquefoil.

SPEC. CHAR. Leaves trifoliate; leaflets equal, wedge-shaped, with three terminal teeth.

Engl. Bot. t. 897.—Fl. Dan. t. 32.—Linn. Sp. Pl. p. 406.; Fl. Suec. p. 101.; Fl. Lapp. (2nd ed.) p. 82.—Huds. Fl. Angl. (2nd ed.) p. 136.—Willd. Sp. Pl. v. i. pt. II. p. 1567.—Sm. Fl. Brit. v. i. p. 345.; Engl. Fl. v. ii. p. 120.—With. (7th ed.) v. ii. p. 409.—Gray's Nat. Arr. v. ii. p. 579.—Lindl. Syn. p. 98.—Hook. Brit. Fl. p. 148.—Macr. Man. Brit. Bot. p. 69.—Don's Gen. Syst. of Gard. and Bot, v. ii. p. 562.—Lightf. Fl. Scot. v. i. p. 175.—Hook. Fl. Scot. p. 97.—Irv. Lond. Fl. p. 237.—Torrey and Gray's Fl. of N. Amer. v. i. p. 433.—*Fragariæ sylvestri affinis planta flore luteo,* Sibb. Scot. pt. II. p. 25. t. 6. f. 1.—*Pentaphylloides pumila, foliis ternis ad extremitates trifidis,* Ray's Syn. p. 256.—*Scotch Cinquefoil,* Pet. H. Brit. t. 41. f. 7.

Fig. 1. Calyx.—Fig. 2. A separate Flower.—Fig. 3. A Petal.—Fig. 4. A Stamen.—Fig. 5. Germen, Style, & Stigma.—Fig. 6. Matured Calyx.—Fig. 7. Calyx, with the 5 capsules.—Fig. 8. Vertical Section of the same.—Figs. 9 & 10. Seeds.—Fig. 11. Transverse section of a Seed.—Fig. 12. The 2 Cotyledons.

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* So named by LINNÆUS in memory of Sir ROBERT SIBBALD, who in 1684 published a learned work, entitled "Scotia Illustrata sive Prodromus Historiæ Naturalis," etc.; the work of twenty years, in which this plant was figured and described. He was the first Medical Professor instituted at Edinburgh, about the year 1685; he greatly advanced the indigenous Botany of Scotland, and became Physician and Geographer Royal to King Charles II.—WITHERING.

† See fol. 48, note †.

‡ See fol. 313, *a*.

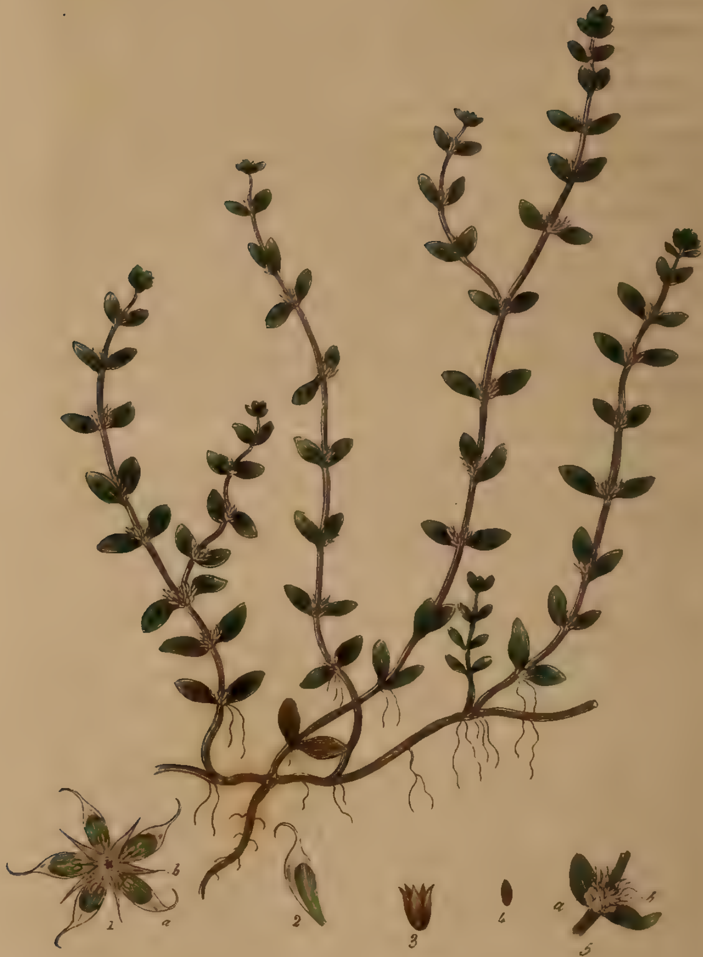
Localities.—On the summits of the Highland mountains of Scotland, in a micaceous soil; common.—*Aberdeenshire;* Mountains above Loch Callater; Avon Hills: Mr. H. C. Watson, in N. B. G.—*Banffshire;* Belrinnes: G. Gordon, in N. B. G.—*Forfarshire;* Glen Phu: W. Brands, in N. B. G.—On the mountains above the old Sonchus Station: Mr. H. C. Watson, in N. B. G.—*Invernes-shire;* Badenoch side of Cairngorm: G. Gordon, in N. B. G. Nevis Mountains, at 2000 to 4000 feet: Mr. H. C. Watson, in N. B. G.—*Perthshire;* Near the summit of Ben More; Killin Mountains; and Ben Lawers: Mr. H. C. Watson, in N. B. G.—*Ross-shire;* Ben Wevis; G. Gordon, in N. B. G.—*Sterlingshire;* North side of Ben Lomond, three-fourths of the way up the mountain, plentiful: Mr. Brown.—*Sutherland;* Ben More: W. H. Campbell, in N. B. G. Ben Layal: Mr. H. C. Watson, in N. B. G.

Perennial.—Flowers in July.

Root woody, tufted, branched, blackish on the outside. *Stems* herbaceous, trailing, leafy, from 1 to 3 inches long, round, not much branched, hairy. *Leaves* alternate, compound, of 3 wedge-shaped, bright green, veiny leaflets, each leaflet entire at the edges, and 3-toothed at the summit, the middle tooth the smallest; the lateral ones sometimes cloven. *Petioles (leaf-stalks)* longer than the leaflets, each with a pair of attached, pointed, parallel, membranous *stipulas* at its base. *Flowers* small, in corymbose, leafy tufts. *Calyx* hairy, permanent. *Corolla* yellow, smaller than the calyx; petals inversely egg-shaped, entire. *Stamens* very short. *Styles* 5, sometimes 10, affixed laterally to the middle of the Germen (see fig. 5).

Whole plant somewhat hairy. Sir J. E. Smith is of opinion, that Plukenet's figure (t. 212. f. 3.), which Linnæus and Willdenow refer to this, belongs rather to *Potentilla subacaulis*, a much more soft and downy plant, with solitary flowers, of a larger size. (See *Sm. Engl. Fl.*)

Sibbaldia procumbens is a native, in moist places, in the mountains of Lapland, Switzerland, Siberia, and North America. With us it has only been found in Scotland. It is one of the rare plants, amongst many others, which Linnæus was so delighted on finding at the commencement of his journey over the Lapland Alps. "In the afternoon," [of July 6, 1732, old style,] says this illustrious Naturalist, "I took leave of Hytton, and, at the distance of a mile from thence, arrived at the mountain of *Wallavari* (or *Hwallawari*), a quarter of a mile in height. When I reached this mountain, I seemed entering on a new world; and when I had ascended it, I scarcely knew whether I was in Asia or Africa, the soil, situation, and every one of the plants being equally strange to me. Indeed I was now, for the first time, upon the Alps! Snowy mountains encompassed me on every side. I walked in snow, as if it had been the severest winter. All the rare plants that I had previously met with, and which had from time to time afforded me so much pleasure, were here as in miniature, and new ones in such profusion, that I was overcome with astonishment, thinking I had now found more than I should know what to do with."—*Tour in Lapland*, v. i. p. 283.



Illecebrum verticillatum Whorled knot-graſs ♃

Walters Del & Sc

Pub.d by W Baxter Botanic Garden Oxford 18[illegible]

ILLE'CEBRUM *.

Linnean Class and Order. PENTA'NDRIA †, MONOGY'NIA.

Natural Order. ILLECE'BREÆ ‡, *Dr. R. Brown.*—Lindl. Syn. p. 60; Introd. to Nat. Syst. of Bot. p. 164.—PARONYCHIEÆ, Rich. by Macgilliv. p. 508.—Loud. Hort. Brit. p. 516.—Don's Gen. Syst. of Gard. and Bot. v. viii. p. 84.—Hook. Brit. Fl. (4th ed.) p. 407. —AMARANTHI, Juss. Gen. Pl. p. 87.—Sm. Gram. of Bot. p. 92.—QUERNEALES; sect. RUMICINÆ; type, SCLERANTHACEÆ; Burn. Outl. of Bot. pp. 523, 587, & 594.—HOLERACEÆ, *Linn.*

GEN. CHAR. *Calyx* (see fig. 1, *a.* and fig. 2.) inferior, 5-angled, of 5 coloured, cartilaginous, hooded, permanent sepals, their back elongated into a horn-like process. *Corolla* none, or reduced to 5 awl-shaped scales, which alternate with the sepals (see fig. 1, *b*). *Filaments* (see fig. 1.) hair-like, from 2 to 5, opposite the sepals, and inserted into their base. *Anthers* simple, of 2 cells. *Germen* superior, egg-shaped, pointed. *Style* very short. *Stigmas* 2, capitate. *Capsule* (fig. 3.) roundish, pointed at each end, included in the calyx, of 1 cell, with 5 valves, or separable along 5 streaks. *Seed* (fig. 4.) solitary, egg-shaped, pointed at each end, inserted into one side of the capsule. *Embryo* nearly straight, placed on one side of the albumen, which is farinaceous.—Small *herbs*, with opposite *leaves*, furnished with scarious *stipulas* at their base (see fig. 5, *a*). *Flowers* (fig. 5, *b.*) axillary, or in cymes; with scarious *bracteas*, smaller than the flowers.

The *calyx* of 5 cartilaginous, hooded sepals, their back elongated into a horn-like process; the *corolla* wanting, or reduced to 5 awl-shaped scales; and the superior, 1-celled, 1-seeded capsule, covered by the calyx; will distinguish this from other genera in the same class and order.

One species British.

ILLE'CEBRUM VERTICILLA'TUM. Whorled Knot-grass. Whorled Creeping Milkwort.

SPEC. CHAR. Stems procumbent, thread-shaped, smooth. Leaves broadly egg-shaped. Flowers crowded in the axils of the leaves, whorled.

Engl. Bot. t. 895.—Fl. Dan. t. 335.—Linn. Sp. Pl. p. 298.—Huds. Fl. Angl. (2nd ed) p. 100.—Willd Sp. Pl. v. i. pt. II. p. 1205.—Sm. Fl. Brit. v. i. p. 268.; Engl. Fl. v. i. p. 335.—With. (7th ed.) v. ii. p. 339.—Gray's Nat. Arr. v. ii. p. 546. —Lindl. Syn. p. 61.—Hook. Brit. Fl. p. 109.—Macr. Man. Brit. Bot. p. 86.—De Cand. Prodr. v. iii. p. 370.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 88.—Fl. Devon. pp. 43 & 170.—Irv. Lond. Fl. p. 231.—Bab. Prim. Fl. Sarn. p. 40.—*Ellecebrum*, Linn. Hort. Cliff. p. 492.—*Corrigiola*, Ray's Syn. p. 160.—*Polygala repens*, Johnson's Gerarde, p 563. f. 1.—Park. Theatr. Bot. p. 1333. n. 4.—*Paronychia verticillata*, Lam. et De Cand. Fl. Fr. v. iii. p. 403.—*Paronychia serpyllifolia palustris*, Vaill. Par. p. 157. t. 15. f. 7.

Fig. 1. A Flower; *a.* sepals; *b.* petals, or scales.—Fig. 2. A separate Sepal.—Fig. 3. A Capsule.—Fig. 4. A Seed.—Fig. 5. A portion of the Stem, with a pair of leaves, accompanied with the Stipulæ, *a*; and a whorl of Flowers, *b.*

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* From *Illecebra* of PLINY, which is from *illicio, to allure*; pretty enticing plants. DON. † See fol. 48, note †. ‡ See fol. 155, *a.*

Localities.—In marshy or boggy ground, and wet meadows; rare.—*Cornwall;* In watery places between St. Columb and St. Michael; also about Penzance; and towards the Land's End: Heath. On Talloe Water, Bradoc: Mr. E. Forster, jun. Among the rocks at Castle Treryn: Borlace, B. G. Marsh between Penzance and Marazion; and other wet places about the former: Mr. H. C. Watson, in N. B. G. Gear Stamps; Gulval; and Land's End: Rev. W. T. Bree, in *Mag. Nat. Hist.* v. iv. p. 161. Base of a hill at the Race-course, Truro: Rev. J. S. Tozer, in *Hook. Brit. Fl.* Gorse Moor and Roche: *Jones's Bot. Tour.* p. 37.—*Devonsh.* East side of the Shute Hill, near Axminster: Rev. W. Buckland, in *Fl. Devon.* Not uncommon in Devon: Dr. Withering.—*Staffordsh.* On the road-side betwixt Elnal and Ranton Abbey: Dr. Withering.—In the *Island of Jersey:* Mr. B. Saunders, in *Bab. Prim. Fl. Sarn.*

Perennial.—Flowers in July.

Root creeping. *Stems* trailing, thread-shaped, smooth, from 2 to 6 inches long, often producing slender thread-shaped fibres from the same joints with the leaves and flowers. *Leaves* opposite, small, egg-shaped, or roundish, entire, rather fleshy, smooth, almost sessile, upper ones crowded. *Stipulas* (see fig. 5, *a.*) intrafoliaceous (placed above the leaf), small, white, scarious, jagged at the margin. *Flowers* (see fig. 5, *b.*) small, snow white, sometimes reddish, crowded together in whorls in the axils of the leaves, and furnished with small white scarious bracteas at their base. *Sepals* (see fig. 1, *a.* and fig. 2.) cartilaginous, blunt, hooded, with long, twisted, terminal bristles or horn-like processes. *Petals* (see fig. 1, *b.*) *(scales* of Sm.*)* awl-shaped, reddish, pointed, alternate with the sepals. *Filaments* very short. *Stigma* notched. *Capsule* of 5 distinct valves.

A delicate and beautiful little plant, a native of Flanders, Germany, England, and many other parts of Europe; but it has not been found either in Scotland or Ireland.

"God of the changeful year!—amidst the glow
Of strength and beauty, and transcendant grace,
Which, on the mountain heights, or deep below,
In shelter'd vales, and each sequester'd place,
Thy forms of vegetable life assume,
—Whether Thy pines, with giant arms display'd,
Brave the cold north, or wrapt in eastern gloom,
Thy trackless forests sweep, a world of shade;
Or whether, scenting ocean's heaving breast,
Thy odoriferous isles innumerous rise;
Or, under various lighter forms impressed,
Of fruits, and flowers, Thy works delight our eyes;—
God of all life! whate'er those forms may be;
O! may they all unite in praising Thee!"

W. Roscoe.

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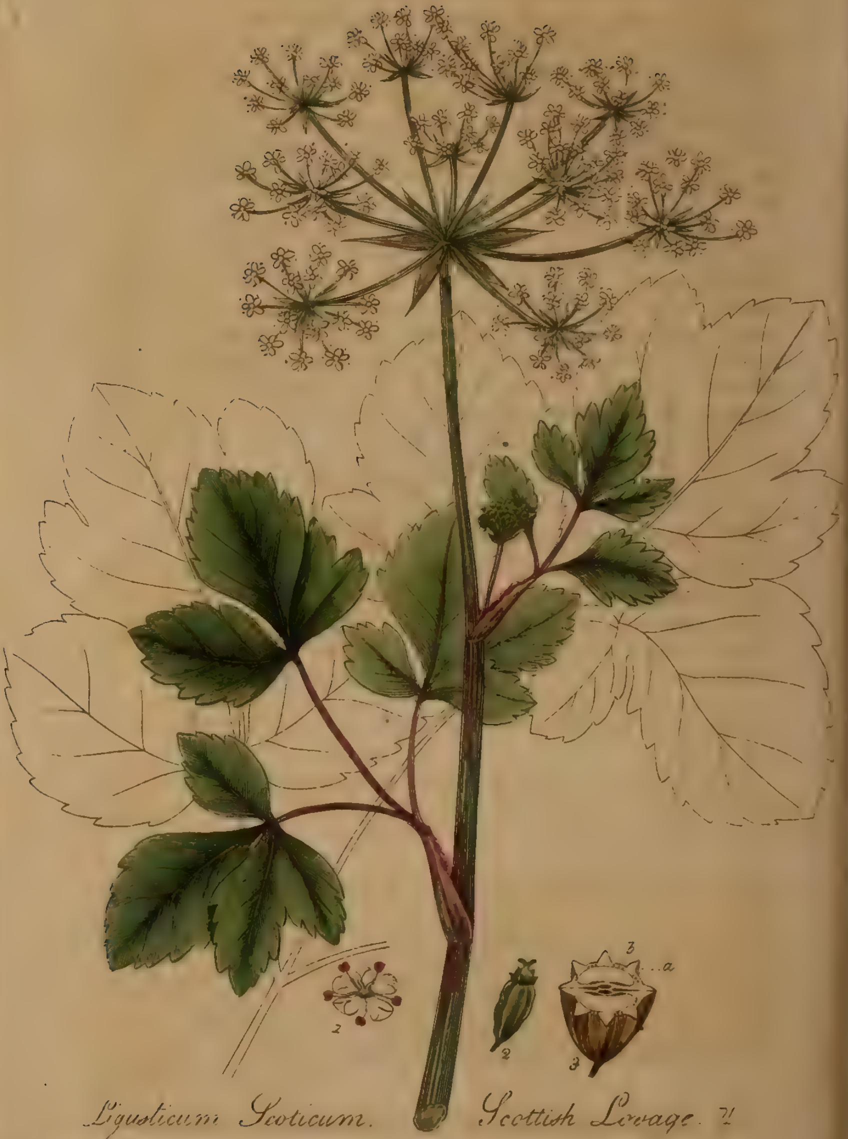

Ligusticum Scoticum. *Scottish Lovage.* ♃

Mathews del & S. Pub^d by W Baxter. Botanic Garden. Oxford 1839

LIGU'STICUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, and 774.

GEN. CHAR. *Flowers* all perfect, prolific, and regular. *Calyx* (see fig. 2.) of 5 small, pointed, upright teeth, sometimes obsolete. *Corolla* (see fig. 1.) of 5 inversely egg-shaped, acute, emarginate petals; each with an inflexed point, and a very short claw. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, shorter than the corolla. *Anthers* roundish. *Germen* oblong, blunt, slightly compressed, furrowed. *Styles* (see figs. 1 & 2.) 2, tumid at the base, permanent. *Stigmas* simple. *Fruit* (see figs. 2 & 3.) unarmed, elliptical, a little compressed at the sides. *Carpels* (see fig. 3.) with 5 sharp, somewhat winged, equal ribs (fig 3, *a*.), the lateral of which form a margin. *Interstices (channels)* with many *vittæ* (fig. 3, *b*). *Seed* almost semicylindrical.—*Universal involucrum* various; *partial ones* many-leaved. *Flowers* white.

The *corolla* of 5 inversely egg-shaped, acute, emarginate petals, with inflexed points, and very short claws; the unarmed, elliptical *fruit;* and the *carpels* with 5 sharp, somewhat winged ribs, with many *vittæ* in the interstices; will distinguish this from other genera in the same class and order.

One species British.

LIGU'STICUM SCO'TICUM. Scotch Lovage. Scotch Parsley. Sea Parsley.

SPEC. CHAR. Leaves twice ternate, opaque; leaflets subrhomboid, broad, acute, smooth, serrated. Universal involucrum of about 6 narrow leaves. Calyx 5-toothed.

Engl. Bot. t. 1207.—Fl. Dan. t. 207.—Linn. Sp. Pl. p. 359.—Huds. Fl. Angl. (2nd ed.) p. 117.—Willd. Sp. Pl. v. i. pt. II. p. 1424.—Sm. Fl. Brit. v. i. p. 309,; Engl. Fl. v. ii. p. 82.—With. (7th ed.) v. ii. p. 376.—Gray's Nat. Arr. v. ii. p. 517.—Lindl. Syn. p. 118.—Hook. Brit. Fl. p. 121.—Macr. Man. Brit. Bot. p. 101.—De Cand. Prod. v. iv. p. 157.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 317.—Lightf. Fl. Scot. v. i. p. 159.—Thomp. Pl. of Berw. p. 30.—Hook. Fl. Scot. p. 89.—Grev. Fl. Edin. p. 64.—Johnst. Fl. of Berw. v. i. p. 71.—Winch's Fl. of Northumb. and Durh. p. 19.—Dick. Fl. Abred. p. 31.—Irv. Lond. Fl. p. 233.—Mack. Fl. Hibern. p. 177.—*Ligusticum scoticum, apii folio*, Ray's Syn. p. 214.—*Ligusticum humilius Scoticum à maritimis*, Pluk. Alm. p. 217.; Phyt. t. 96. f. 2.—*Imperatoriæ affinis umbellifera maritima Scotica*, Sibb. Scot. Illustr.

Fig. 1. A Flower.—Fig. 2. A Fruit.—Fig. 3. Transverse section of a Fruit; *a*, a rib; *b*, a channel, with its vittæ.—*All magnified;* fig. 4, *highly so.*

* From *Liguria*, a country in which some of the species abound. Hence, too, comes our word *Lovage*.

† See folio 48, note †. ‡ See folio 235 *a*.

pl. II. p. 32. t. 12. f. 3. *bad.—Seseli maritimum Scoticum humile, foliis Imperatoriæ,* Herm. Parad. p. 227, with a figure.—*Scotch Parsley,* Pet. II. Brit. t. 26. f. 11.

Localities.—On the sea-coasts of Scotland, and the north of England ; very rare.—*Northumberland ;* Among the rocks on the side of the ruins of Dunstanborough Castle; July 18, 1804 : N. J. Winch, Esq. Its most southern locality : ibid. On the beech, a quarter of a mile south of Bamborough Castle : W. C. Trevelyan, Esq. in *Fl. of Northumb.*—Coast near Embleton : R. Embleton, in N. B. G.—SCOTLAND. *Aberdeensh.* Near Aberdeen, on rocks a little north from the Lighthouse ; and rocks at Bay of Nigg, &c. : *Dick. Fl. Abred.—Angus-sh.* On the coast between Arbroath and the Redhead : Mr. Brown, in *With.—Banffsh.* On the coast : G. Gordon, in N. B. G.—*Berwicksh.* Seashore at Lamberton Shields : J. V. Thompson, Esq. Shore at Eyemouth : Mr. A. Baird. in *Fl. Berw.* On rocks between Fastcastle and Redheugh : G. Johnston, Esq. M. D. in *Fl Berw.—Caithness ;* Near Wick : Mr. M'Leay, in *With.* Berrydale : G. Gordon, in N. B. G.—*Edinburghsh.* Back of the glass-works at Leith : J. Woodforde, in N. B. G.—*Elginsh.* Covesea, Stotfield, and Cummingstown : G. Gordon, in N. B. G.—*Fifesh.* In several parts of the coast between Burnt-island and Queen's-ferry : Mr. H. C. Watson, in N. B. G. Between N. and S. Weems ; and below Kinghorne : Rev. J. Lightfoot. From N. Queen's-ferry eastward, along the whole coast : Dr. Greville, in *Fl. Edin.—Inverness-sh.* Isle of Skye: Rev. J. Lightfoot.—*Linlithgowsh.* Rocks on the shore near New Hall : Mr. H. C Watson, in N. B. G.—*Orkney ;* Scalpa : Dr. Gillis, in N. B. G.—IRELAND. On the rocks about Donaghadee, and the Copland Isles : Mr. Templeton, in *Fl. Hib.*—County of Derry : Mr. D. Moore : *ibid.*

Perennial.—Flowers in July.

Root spindle-shaped, acrid but aromatic. *Stem* upright, nearly simple, about a foot high, round, smooth, striated, somewhat leafy. *Leaves* compound, those from the root and lower part of the stem twice ternate, on longish petioles ; upper stem-leaves often simply ternate, and nearly sessile ; *leaflets* large, rhomboid, broad, acute, rather fleshy, veiny, smooth, deeply and irregularly serrated, entire towards the base. *Petioles* bordered, with a purplish compressed membrane, at the base. *Umbels* upright, terminal, smooth, many-rayed, not very large. *Universal involucrum* of about 6, oblong, unequal, entire leaves ; *partial umbel* of more numerous, spear-shaped, ones. *Flowers* small, equal, white, with a reddish tinge. *Calyx* 5-toothed. *Petals* inflexed. *Anthers* red. *Fruit* (fig. 2.) oblong, ribbed ; the ribs with somewhat membranous wings.

As well as of Britain, this plant is a native also of Lapland, Sweden, Denmark, North America, and Siberia ; Kotzebue's Sound, and Kamtschatka. The herb is eaten either raw as a salad, or boiled as greens, by the natives of Scotland and its isles. The flavour is highly acrid, and though aromatic, and perhaps not unwholesome, very nauseous to those who are unaccustomed to such food. In the Isle of Skye it is called *Shunis.* The root is reckoned a carminitive, and an infusion of the leaves, in whey, good physic for calves.

Horses, sheep, and goats, are said to eat this plant ; cows to refuse it.

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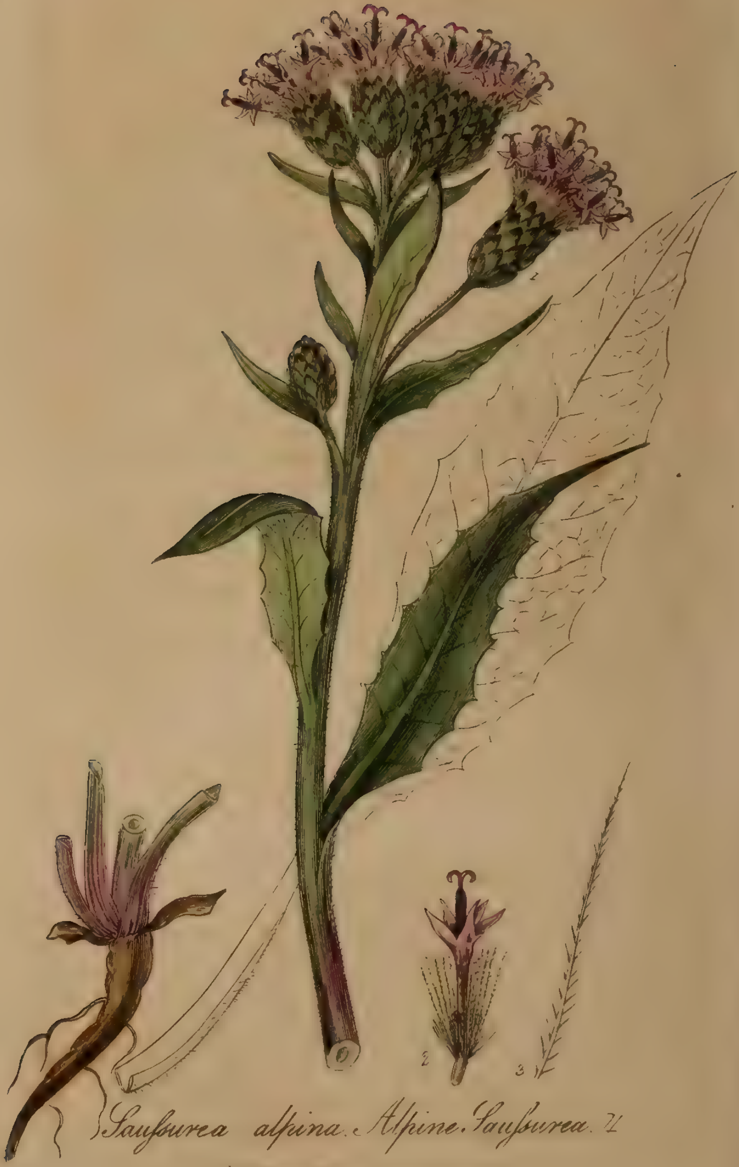

Sauſsurea alpina. Alpine Sauſsurea. ♃

Mathews Del. & Sc.

Pubd by W. Baxter Botanic Garden Oxford 18[illegible]

SAUSSU'REA *.

Linn. Class & Order. SYNGENE'SIA †, POLYGA'MIA, ÆQUALIS ‡

Natural Order. COMPO'SITÆ §, tribe, CYNAROCEPHALÆ, *Juss.*—Lindl. Syn. pp. 140 & 152.; Introd. to Nat. Syst. of Bot. pp. 197 and 200.—Mack. Fl. Hibern. pp. 142 & 154.—Hook. Brit. Fl. (4th edit.) p. 410.—COMPO'SITÆ; subord. CARDUA'CEÆ : Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CYNAROCEPHALÆ; Rich. by Macgilliv. pp. 454 & 455.—CINAROCEPHALÆ, sect. 1. Juss. Gen. Pl. pp. 171 & 172.—Sm. Gram. of Bot. p. 121.; Engl. Fl. v. iii. p. 334.—SYRINGALES; type, CYNARACEÆ; Burn. Outl. of Bot pp. 900 & 931.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) oblong, nearly cylindrical, of numerous imbricated, unarmed, permanent scales. *Corolla* compound, uniform; *florets* (see fig. 2.) rather numerous, perfect, equal, tubular, funnel-shaped; the limb in 5 deep equal segments. *Filaments* 5, hair-like, very short. *Anthers* united in a cylindrical tube, the length of the florets, setose below. *Germen* (see fig. 2.) inversely egg-shaped. *Style* (see fig. 2.) thread-shaped, scarcely prominent. *Stigma* oblong, reflexed. *Seed* inversely egg-shaped, somewhat angular. *Pappus* (see fig. 2.) double, sessile; *outer* of short rough bristles; *inner* (see figs. 2 & 3.) long and feathery. *Receptacle* bristly or chaffy.

The oblong *involucrum* of numerous, imbricated, unarmed scales; the sessile *pappus* in two rows; the *outer* of short rough bristles, the *inner* long and feathery; and the scaly *receptacle;* will distinguish this from other genera, with the florets all tubular, in the same class and order.

This differs from *Serratula* (t. 174.) in the *pappus* being double, in two unequal rows.

One species British.

SAUSSU'REA ALPINA. Alpine Saussurea. Alpine Sow-wort. Dock-leaved Thistle-gentle.

SPEC. CHAR. Leaves spear-shaped, toothed, cottony beneath; those of the root egg-spear-shaped, stalked. Flowers in a clustered umbel.

SAUSSUREA ALPINA, De Cand.—Lindl. Syn. p. 152.—Hook. Brit. Fl. p. 349.—Macr. Man. Brit. Bot p. 136—Irv. Lond. Fl. p. 273.—Mack. Fl. Hibern. p. 154.—*Serratula alpina*, Engl. Bot. t. 599.—Fl. Dan. t. 37.—Linn. Sp. Pl. p. 1145.—Fl. Lapp. (2nd ed.) p. 241.; Fl. Suec. p. 278.—Huds. Fl. Angl (2nd ed.) pp. 349 and 657.—Willd. Sp. Pl. v. iii. pt. III. p. 1641.—Sm. Fl. Brit. v ii. p. 846.; Engl. Fl. v. iii. p. 383.—With. (7th ed.) v. iii. p. 907.—Lightf. Fl. Scot. v. i. p. 448. t. 19.—Hook. Fl. Scot. p. 235.—Mack. Catal. Pl. of Irel. p. 71.—*Bennettia alpina*, Gray's Nat. Arr. v. ii. p. 440.—*Cirsium humile montanum, Cynoglossi folio. polyanthemum*, Ray's Syn. p. 193.—Dill. Elth. v. i. p. 82. t. 70.—*Cirsium alpinum, Boni Henrici folio*, Tourn. Inst. p. 448.—*Carduo-cirsium minus, cambro-britannicum. floribus plurimis summo caule congestis*, Pluk. Almag. p. 83.; Phyt. t. 154. f. 3.—*Carduus mollis, foliis lapathi*, Johnson's Gerarde, p. 1184, with a fig.—*Carduus mollis, lapathi folio*, Bauh. Hist. v. iii. p. 46. f. 47.—*Carduus mollis flore cæruleo*, Merr. Pin. p. 21.

Fig 1. Involucrum, inclosing the florets.—Fig. 2. A separate Floret, with its Germen and Pappus.—Fig. 3. A single, feathery, inner hair of the Pappus.

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* So named in honour of the two SAUSSURES, father and son.

† See fol. 91, note †.

‡ See fol. 147, note ‡.

§ See fol. 27, *a*.

Localities.—On moist alpine rocks, very rare.—*Cumberland ;* Castle ; and near the Church at Bewcastle: Huichinson, in B. G.—On Helvellyn: N. B. G.—*Lancashire ;* In Brearcliff near Burnley: Merrett.—WALES. *Caernarvonshire ;* On the highest rocks of Snowdonia, as Clogwyn y Garnedd ; Iscolion dûon, &c. : Ray. Rocks of Crib y Ddescil and Cwm Idwel, in places scarcely accessible: Mr. Griffith.--SCOTLAND. *Argyleshire ;* Glenorchy ; Ben Arthur, by Arroquhar: W. Borrer, Esq. in *Fl. Scot.—Dumfries-shire ;* Near Moffat; and in a deep gulley at the foot of White Coom Edge, Annandale: Dr. Walker.—*Forfarshire ;* Rocks on the left side of Glen Dole, and other parts of the Clova Mountains: Mr. H. C. Watson, in N. B. G.—*Inverness-shire ;* In Skye ; and on mountains in the Isle of Rum : *Fl. Scot.—Perthshire ;* Ben Ledi ; near the summit of Ben Lawers ; Craig Calliach ; and Schroine ach Lochen : N. B. G. In Glen Lyon : Lightfoot.—*Ross-shire ;* Observed in this county by the Rev. G. Gordon.—*Sterlingshire ;* On Ben Lomond : N. J. Winch, Esq.—*Sutherland ;* Ben Hope ; and hills near Inchnadamff : N. B. G.—IRELAND. *County of Kerry ;* Cliffs near the summit of Brandon Mountain : 1804 ; Mr. Mackay.

Perennial.—Flowers in July and August.

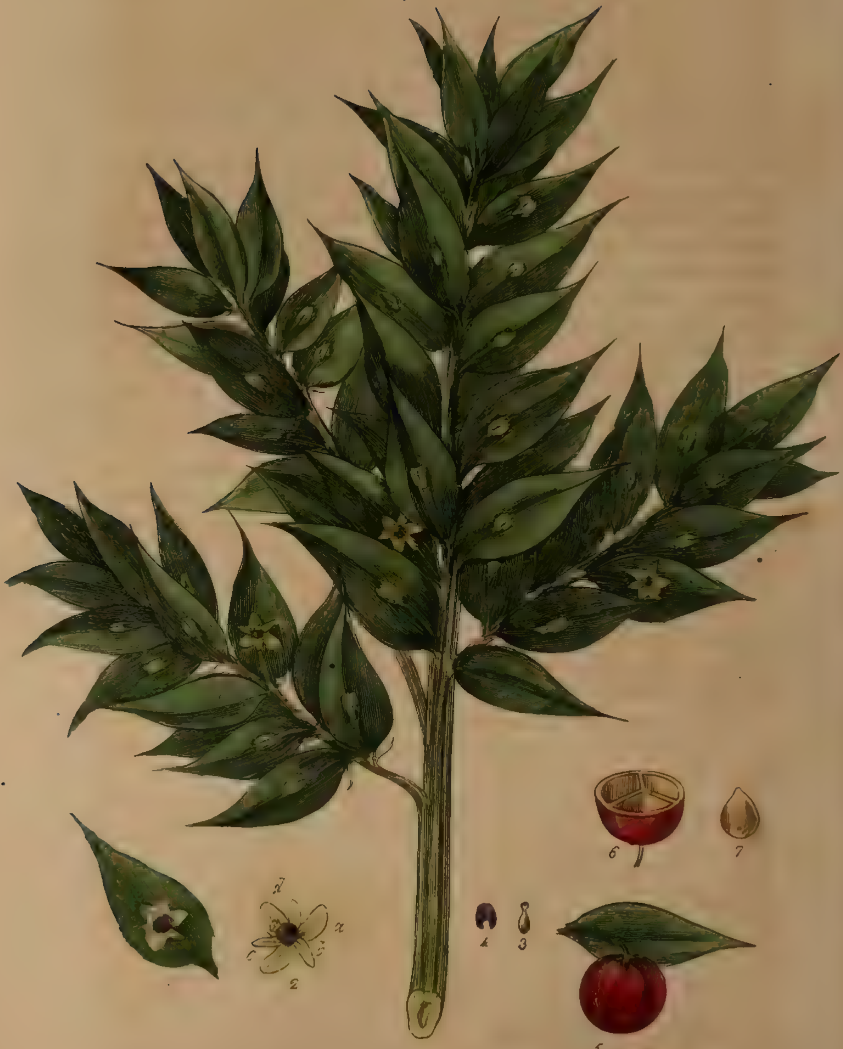
Root somewhat woody, tough ; blackish on the outside. *Stems* simple, from 3 inches to a foot high, upright, round, leafy, striated, cottony. *Leaves* very various in length and breadth, usually egg-shaped, inclining to heart-shaped ; sometimes strap-spear-shaped, always more or less toothed ; nearly smooth, and of a fine green on the upper side ; white and cottony on the under ; the lower leaves on longish, channelled *petioles*, upper ones almost sessile. *Flowers* few, in a terminal, corymbose, or umbellate, tuft, very handsome. *Involucrum* (fig. 1.) somewhat downy, its scales tipped with purple or brown. *Florets* (fig. 2.) pink, with blue *anthers*. *Pappus* (see figs. 2 & 3.) as long as the *florets*, elegantly feathered.

This plant is a native of the high mountains of Lapland, Norway, Austria, Switzerland, Silesia, and Siberia. Johnson, the editor of Gerarde's *Herbal*, appears to have been the first who discovered it in Britain ; he is said to have found it on Snowdon, and some other high mountains in Wales, previous to 1641.

It is subject to much variation, especially in the form of the leaves, occasioned, probably, by local accidents.

Oh!—they're fair!
Most wonderful and lovely are they all,—
From our own daisy "crimson-tipped," that greets
Our English childhood with its lowly look,
To the proud giants of the western world,
And gorgeous denizens of either Ind,
Towering in Nature's majesty and might,
And lifting their radiant heads to hail
The sun—their monarch—as he burns above.
Who does not love them?

From the *Parterre*.



Ruscus aculeatus. Common Butcher's-broom. ♄

Pub^d. by W. Baxter Botanic Garden Oxford 1840. Mathews Sc

RU'SCUS *.

Linnean Class and Order. Diœ'cia †, Tria'ndria ‡.

Natural Order. Smila'ceæ, *Dr. R. Brown.*—Lindl. Syn. p. 270.; Introd. to Nat. Syst. of Bot. p. 277.—Loud. Hort. Brit. p. 538.—Mack. Fl. Hibern. p. 286.—Hook. Brit. Fl. (4th edit.) p. 423.—Lilia'ceæ, Loud. Encycl. of Trees and Shrubs, p. 1099.—Asparagineæ, Rich. by Macgill. p. 402.—Asparagi, Juss. Gen. Pl. p. 40.—Sm. Gram. of Bot. p. 71.—Liliales; sect. Liliacinæ; type, Smilaceæ; Burn. Outl. of Bot. v. i. pp. 418, 425, & 436.—Sarmentaceæ, *Linn.*

Gen. Char. *Sterile Flower. Calyx* inferior, of 3 spreading, egg-shaped sepals. *Corolla* of 3 spreading petals, smaller than the sepals. *Nectary* central, egg-shaped, tumid, upright, coloured, undivided, as long as the calyx; pervious at the summit. *Filaments* none. *Anthers* 3, spreading, seated on the top of the nectary; combined at the base.—*Fertile Flower* (see figs. 1 & 2). *Calyx* (fig. 2, *a.*); *Corolla* (fig. 2, *b.*); *Nectary* (fig. 2, *c.*); as in the *sterile flowers. Anthers* none, or imperfect. *Germen* (fig. 3.) superior, oblong-egg-shaped, concealed in the nectary (fig. 4). *Style* (see fig. 3.) short and thick. *Stigma* blunt, prominent through the orifice of the nectary (see fig. 2, *d*). *Berry* (fig. 5.) superior, globular, succulent, of 3 cells (see fig. 6). *Cells* 2-(sometimes only 1) seeded. *Seeds* (fig. 7.) nearly globular, hard.

The *calyx* of 3 sepals; the *corolla* of 3 petals; the tubular *nectary*, (combined filaments ?) with or without anthers; the single *style;* and the superior, globose *berry*, with 3, 2-seeded *cells;* will distinguish this from other genera in the same class and order.

One species British.

RU'SCUS ACULEA'TUS. Prickly Butcher's Broom. Common Butcher's Broom. Knee Holly. Box Holly. Knee Holme. Wild Myrtle. Prickly Pettigree. Knee Hulver.

Spec. Char. Stem rigid, branched. Leaves egg-shaped, sharp-pointed, very rigid and pungent, bearing the solitary flower on their upper surface, without a leaflet.

Engl. Bot. t. 560.—Woodv. Med. Bot. suppl. t. 237.—Linn. Sp. Pl. p. 1474.—Huds. Fl. Angl. (2nd ed.) p. 437.—Willd. Sp. Pl. v. iv. pt. ii. p. 874.—Sm. Fl. Brit. v. iii. p. 1073.; Engl. Fl. v. iv. p. 235.—With. (7th ed.) v. ii. p. 92.—Gray's Nat. Arr. v. ii. p. 189.—Lindl. Syn. p. 271.; 2nd edit. p. 270.—Hook Brit Fl. p. 434.—Macr. Man. Brit. Bot. p. 234.—Loud. Arb. et Frutic. Brit. v. iv. p. 2518.; fig. 2387.; Encycl. of Trees and Shrubs, p. 1099. fig. 2060.—Sibth. Fl. Oxon. p. 22.—Hook. Fl. Scot. p. 288.—Relh. Fl. Cant. (3rd ed.) p. 412.—Phil. Sylva Fl. v. ii. p. 309.—Kent's Sylvan Sket. p. 61.—Fl. Devon. pp. 159 & 129.—Winch's Fl. of Northumbl. and Durh. p. 64.—Walker's Fl. of Oxf. p. 294.—Bab. Prim. Fl. Sarn. p. 94.—Irv. Lond. Fl. p. 107.—Luxf. Reig. Fl. p. 84.—Cow. Fl. Guide, p. 45.—Gulliv. Pl. of Banb. p. 20.—Beesley's Hist. of Banb. p. 590.—***Ruscus***, Ray's Syn. p. 262.—Johns. Ger. p. 907, with fig.—Bauh. Hist. v. i. p. 579, with fig.; Bauh. Pin. p. 470.—***Butcher's Broom***, Petiv. H. Brit. t. 44. f. 4.

Fig. 1. A Leaf, with its Flower.—Fig. 2. A Fertile Flower; *a*, a Sepal; *b*, a Petal; *c*. Nectary; *d*. Stigma.—Fig. 3. Germen, Style, and Stigma.—Fig. 4. Nectary.—Fig. 5. A Leaf and Ripe Berry.—Fig. 6. Section of a Berry.—Fig. 7. A Seed.

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* Anciently ***Bruscus;*** from ***Beuskalen***, in Celtic, ***Box-Holly.***

† See fol. 143, note †. ‡ See fol. 45, note †.

Localities.—On bushy heaths, and in woods, especially on a gravelly soil; not common.—*Oxfordshire;* Between Caversham and Maple Durham.—*Berks;* Streatly Wood: H. Woollcombe, Esq. Bradfield: Rev. Mr. Witts.—*Cambridgeshire;* Anglesey Abbey.—*Cornwall;* Lemorna Cove; and St. Martin's Isle, Scilly.—*Devon;* Harford Wood, three miles from Sidmouth. Cliffs at Marychurch, and Cockington Wood.—*Durham;* Near Cockerton; and in Cliff Wood.—*Hants;* Shore near Portsmouth. Not uncommon about Southampton. New Forest, near Stony Cross. Stoke, near Gosport (variety *laxus*).—*Kent;* Tunbridge Wells. N. and M. Kent.—*Norfolk;* Hethel Woods near Norwich.—*Suffolk;* Heath near Lowestoft.—*Surrey;* Claygate Common; Coulsdon; in Norwood; and on Cockshot Hill, S. E. of the Mill.—*Sussex;* About Hastings. Local in W. Sussex.—*Yorksh.* Near Ripon.—SCOTLAND. *Ayrshire;* Skeldon Woods, near Ayr.—*Lanarkshire;* In the woods at Bothwell, near Glasgow.—It has not been found in IRELAND.

Perennial.—Flowers in March and April.

Root thick, fleshy, brown on the outside, white within; much divided at the crown, and furnished with long fibres which strike deep into the ground. *Stems* upright, from 1 to 3 feet high, tough, woody, rigid, much branched, round, green, striated; not flowering till the second year, after which they die down to the root. *Leaves* a continuation of the branches, equally firm and durable, with scarcely any *petioles (leafstalks)*, alternate, spreading every way, obliquely twisted, egg-shaped, not an inch long, many-ribbed, each tipped with a sharp point. *Flowers* small, solitary, near the middle of the upper side of each leaf, apparently sessile, but their stalk is imbedded beneath the outer coat, and runs down to the base of the leaf, from whence it may with ease be dissected. *Calyx* and *Corolla* of a yellowish-green. *Nectary* (fig. 4.) purplish. *Berry* (fig. 5.) nearly as large as a wild Cherry, scarlet, juicy, and sweetish. *Seeds* (fig. 7.) originally 6, but only 1 or 2 come to perfection; these are hard, white, and semi-transparent. Instead of a leaflet, of considerable size, which accompanies the flower in some species, there is in this a small spine, or bristle, winged at the base, besides 2 or 3 membranous bracteas, on the elongated fruit-stalk. *Ruscus laxus* of Tr. of Linn. Soc. v. iii. p. 334, is a variety of this with more extended and wavy *branches*, and the *leaves* rather elliptical than egg-shaped, and tapering at the base. *Sm. Engl. Fl.*

Ruscus aculeatus is an evergreen, somewhat shrubby, plant, smooth in every part. It is a native of Europe, but not of the more northern parts. It is also found in Asia and Africa. The green shoots are cut, bound into bundles, and sold to the butchers for sweeping their blocks. Huxters place the boughs round their bacon and cheese to defend them from mice, the prickly leaves being impenetrable. It is also used, in London, by the manufacturers of cigars, &c., for sprinkling the saline liquor over the tobacco leaves. The tender young shoots, in Spring, are sometimes gathered and eaten by the poor like those of Asparagus; and the branches, with the ripe fruit on them, were formerly stuck up in sand, with the stalks of the common pæony *(Pæónia corallína,* t. 217,*)* and the wild Iris *(I'ris fœtidíssima)*, full of their ripe seeds, which, altogether, made a show in rooms during Winter. The root has a bitterish taste, and was formerly much used in medicine as an aperient and diuretic, particularly in cases of dropsy.—See ***Loud. Arb. et Frutic. Brit.***

The *Natural Order* Smila'ceæ is composed of monocotyledonous *herbaceous plants* or *under-shrubs.* Their *leaves* have parallel veins. Their *flowers* are either perfect or diœcious, inferior, pataloid, 6-parted, and regular; with 3, 6, or 8 stamens, inserted into the segments near their base, seldom hypogynous. Their *ovary* is free, 3- or 4-celled; and the *cells* 1-, 2-, or many-seeded. The *style* is single, with a simple, or 3-lobed *stigma.* The *fruit* is a roundish *berry;* and the *seeds* have a membranous *testa,* and horny *albumen.*—The British genera are, ***Ruscus***, t. 474.—*Convallaria*, t. 78.—and *Paris*, t. 6.

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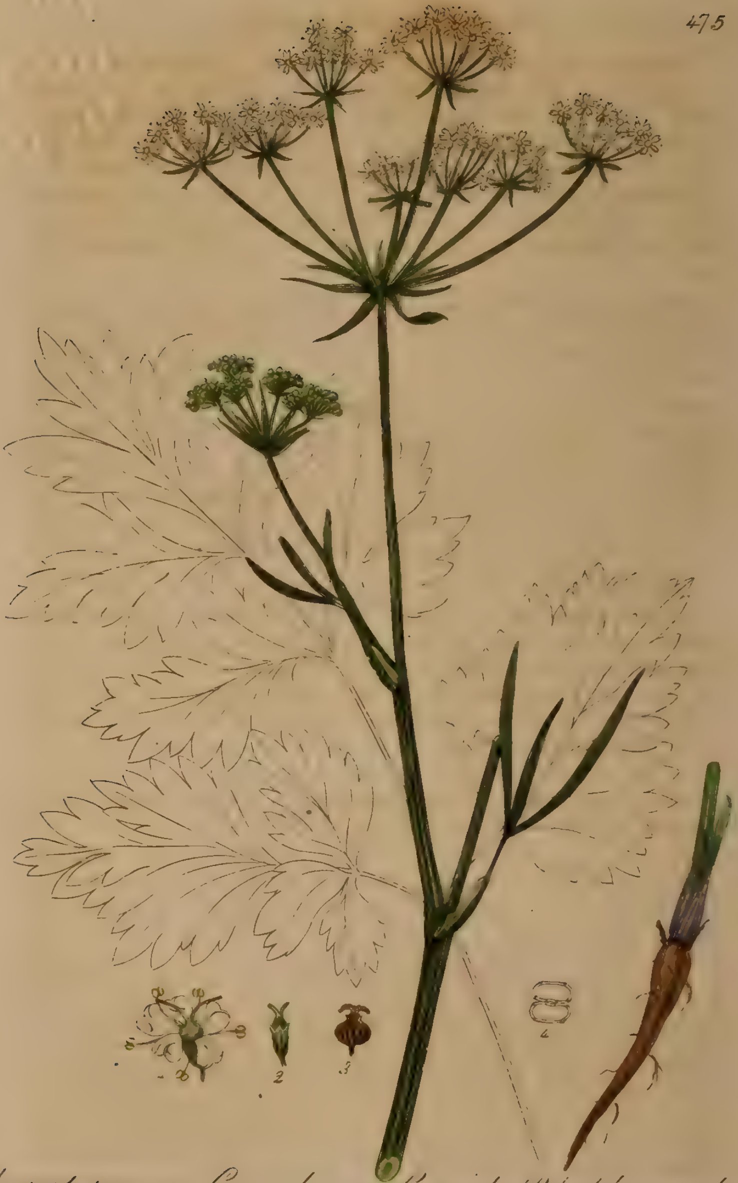

Physospermum Cornubiense Cornish Bladder seed. ♃

Mathews Del. &c

Pub.d by W Baxter, Botanic Garden, Oxford 1842.

(475.)

PHYSOSPE'RMUM*.

Linnean Class and Order. Penta'ndria †, Digy'nia.

Natural Order. Umbelli'feræ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—Umbellatæ, *Linn.*—Rosales; sect. Angelicinæ; type, Smyrniaceæ; subtype, Scandicidæ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 780, and 781.

Gen. Char. *Calyx* (see fig. 2.) of 5 small, pointed, upright, permanent teeth; broad at the base. *Corolla* (see fig. 1.) of 5 inversely egg-shaped, somewhat emarginate, inflexed petals. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, shorter than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) oblong, blunt, moderately compressed, furrowed. *Styles* in the flower scarcely longer than the calyx, upright, angular, tumid at the base; subsequently a little elongated, spreading, permanent. *Stigmas* simple. *Fruit* (fig. 3.) unarmed, contracted at the side, double. *Carpels* roundish, uniform, each with 5 indistinct *ribs*, and single *vittæ* between them. *Seed* involute, lunate. *Universal* and *partial Involucrum* of many leaves. *Flowers* white.

The 5-toothed *calyx;* the inversely egg-shaped, somewhat emarginate, inflexed *petals;* the unarmed, double fruit, contracted at the side; the roundish, uniform *carpels*, each with 5 indistinct *ribs*, of which the lateral ones are placed within the margin; and the *interstices* with single *vittæ;* will distinguish this from other genera in the same class and order.

One species British.

PHYSOSPE'RMUM CORNUBIE'NSE. Cornish Bladder-seed. Cornish Lovage. Cornwall Saxifrage.

Spec. Char. Lower leaves twice or thrice ternate, smooth; leaflets wedge-spear-shaped, deeply toothed; uppermost leaves reduced to the sheaths, each sheath bearing three strap-shaped, nearly entire leaflets.

Physospe'rmum cornubie'nse, De Cand. Prod. v. iv. p. 246.—Hook. Brit. Fl. p. 133.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 380.—Macr. Man. Brit. Bot. p. 107.—*Physospérmum commutátum*, Spreng. Umbell. Spec. p. 22. t. 4. f. 8., exclusive of many synonymes.—Lindl. Syn. p. 126.—*Danaa aquilegifolia*, Lag. Am. Nat. v. ii. p. 97? ex. synonyme of Spreng.—*Pseudospérmum commutátum*, Gray's Nat. Arr. v. ii. p. 517.—*Ligusticum cornubiense*, Linn. Sp. Pl. p. 359; Amæn. Acad. v. iv. p. 310.—Huds. Fl. Angl. (2nd ed.) p. 118.—Engl. Bot. t. 683.—Willd. Sp. Pl. v. i. pt. ii. p. 1426.—Sm. Fl. Brit. v. i. p. 310.; Ic. Pict. Plant. Rar. t. 11.; Engl. Fl. v. ii. p. 82.—Prod. Fl. Græc. v. i. p. 193.—With. (7th ed.) p. 376.—Irv. Lond. Fl. p. 233.—*Smyrnium tenuifolium nostras*, Ray's Hist. v. iii. p. 254.—Dill. in Ray's Syn. p. 209. t. 8.—*Cornwall Saxifrage*, Pet. H. Brit. t. 26. f. 9.

Fig. 1. A Flower.—Fig. 2 Germen and Styles.—Fig. 3. Fruit.—Fig. 4. Transverse section of ditto.—Figs. 1 and 4 *magnified.*

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* From *physa*, Gr. a *bladder;* and *sperma*, Gr. a *seed.*

† See fol. 48, note †. ‡ See fol. 235, *a.*

LOCALITIES.—In bushy fields; extremely rare.—*Cornwall;* First found by Mr. STEVENS, in the time of DILLENIUS; after which it remained for half a century unobserved. In great plenty in a field more than a mile north of Bodmin, which had then (1788) been ploughed, after having lain fallow for ages: Mr. PENNINGTON. In a wheat-field, and in an adjoining coppice called Marget, or Margaret, Wood, about three furlongs from the Bodmin Turnpike, that leads to Launceston; (1789): Sir T. CULLUM. In a field about half a mile further from Bodmin, [than Mr. PENNINGTON's station for it,] on ground sloping into a valley facing to the west, and nearly at the bottom of the slope: June, 1793; Dr. WITHERING. "Shown to Mr. SOWERBY and me in fields about half a mile north of Bodmin by Dr. HALL, plentifully:" D. TURNER, Esq. (1799 ?) in B. G. Plentifully at Hungerill, in the parish of Cardynham, near Bodmin, on the sloping side of a barren hill: Mr. STACKHOUSE. In a wood, and corn-field at Cardynham Parsonage; and in Draw-wood, Bradoc: Mr. FORSTER, jun. Very abundant two miles north-west of Bodmin, on Hare Down, half a mile above Dunmere River: Rev. J. P. JONES, in *Bot. Tour.* p. 37. Abundant in Oak Coppices, and adjacent fields and hedges, near Bodmin: Mr. H. C. WATSON, in N. B. G.

Perennial.—Flowers in July.

Root spindle-shaped, descending deep into the ground. *Stem* from 18 inches to 2 feet high, solitary, upright, round, striated, smooth; panicled above, purplish at the base. *Leaves* mostly radical, on long *petioles*, thrice ternate; *leaflets* wedge-shaped, cut and laciniated, or deeply 3-parted, the segments pointed, smooth, or minutely downy on the veins and margins. *Stem-leaves* few, of 3 strap-spear-shaped, pointed, entire leaflets; the uppermost of all often simple. *Umbels* terminal, upright, of several *universal* as well as *partial*, smooth, angular *rays*. *Universal involucrum* of from 4 to 8, spear-shaped, or somewhat egg-shaped, pointed leaves, much shorter than the rays; *partial ones* similar, equal to the partial rays. *Calyx* evident. *Petals* white, very slightly irregular in the outermost flowers only, inversely egg-shaped, or inversely heart-shaped, with an incurved point. *Anthers* yellow. *Germen* egg-oblong, laterally compressed, furrowed. *Styles* tumid, and almost globular at the base; at first upright, afterwards spreading, and finally horizontal, permanent. *Stigmas* bluntish. *Fruit* almost globose, laterally compressed, and contracted between the *carpels*, so that the fruit is double. *Carpels* roundish, with 5 ribs and 4 broad, brown *vittæ*; the coat crustaceous, and so loose that the *seed* is quite free within; a transverse section of this seed is crescent-shaped.—The root discharges a yellow resinous juice when wounded. See Sir J. W. HOOKER'S *Brit. Fl.*

This rare and very local plant has never been found in any other part of Britain than about Bodmin, though it is said to be not unfrequent in the south of Europe, and in Greece. Dr. WITHERING says, that cattle are so fond of the plant that they eat it down to the ground wherever they can get at it; so that it is usually found only in places where it is so protected by thorns and briers as to be inaccessible to them.

The drawing for the accompanying plate was made from a specimen gathered near Bodmin by DAWSON TURNER, Esq. in 1799, and deposited in the SHERARDIAN *Herbarium* at the Oxford Garden.

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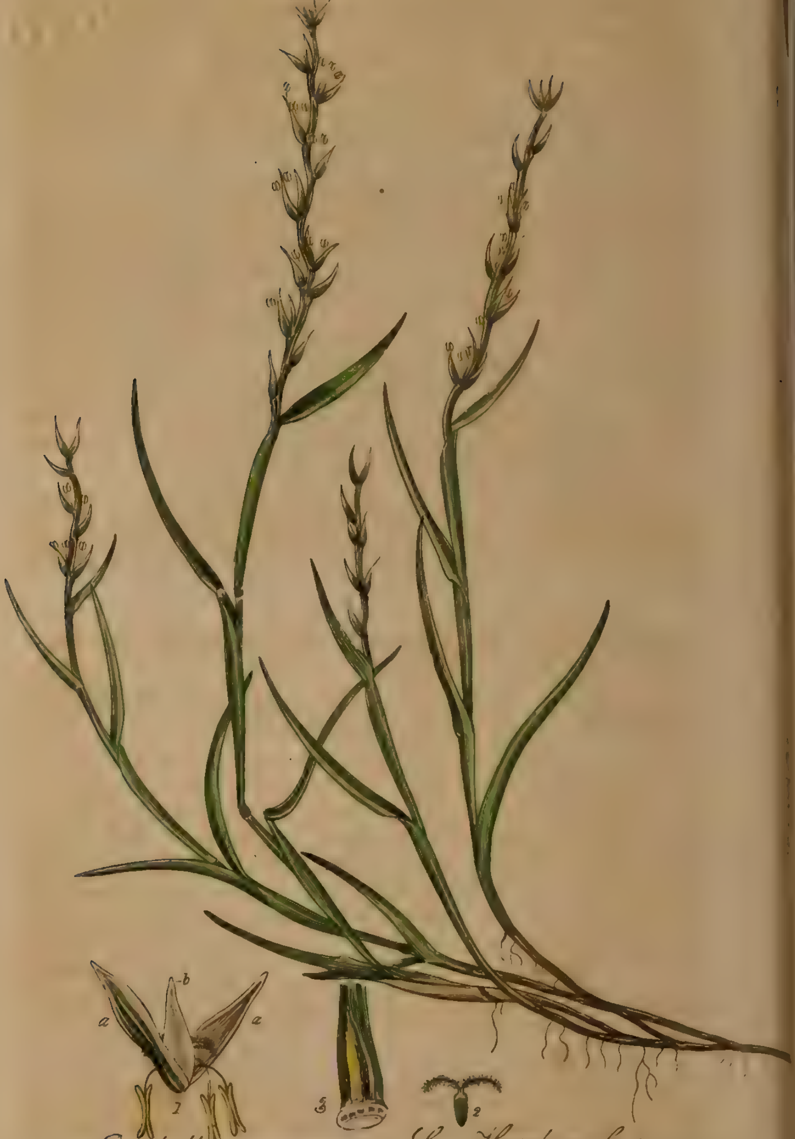

Rottbollia incurvata. Sea Hard-graſs. ⊙

Ruſsell Del. Pub^d by W Baxter Botanic Garden Oxford, 1842 Mathews sc.

ROTTBO'LLIA *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.*—GRAMINA'LES; sect. TRITICINÆ; type, HORDEA'CEÆ; Burn. Outl. of Bot. v. i. pp. 359, and 362.

GEN. CHAR. *Common Receptacle (rachis)*, or main stalk, many-flowered, elongated, jointed, finally separable, with a channel in each joint (see fig. 3.), alternately disposed, to receive the *spikelets* (see fig. 1.), which are mostly 1-flowered, seldom 2-flowered. *Calyx* of 2 glumes, unilateral, and sometimes combined into one, longer than the corolla. *Corolla* of 2 spear-shaped, pointed, membranous, nearly equal, paleæ, inflexed at the edges. *Nectary* of 2 acute scales. *Filaments* (see fig. 1.) 3, hair-like. *Anthers* pendulous, cloven at each end. *Germen* (see fig. 2.) oblong, bluntish. *Styles* 2, short. *Stigmas* (see fig. 2.) widely spreading, feathery. *Seed* elliptic-oblong, shut up in the cavity of each joint of the rachis, by the closed glumes, and falling off with it.

The 1- or 2-flowered *spikelets*, imbedded in the rachis; and the *calyx* of 2 parallel, sometimes combined, awnless glumes; will distinguish this from other genera, with the inflorescence in 2-sided spikes, in the same class and order.

One species British.

ROTTBO'LLIA INCURVA'TA. Bent Rottbollia. Sea Hardgrass. Snake-tail.

SPEC. CHAR. Spikes cylindrical, awl-shaped. Glumes combined below. Floret solitary. Corolla awnless.

Engl. Bot. t. 760.—Fl. Græc. v. i. p. 72. t. 91.—Knapp's Gram. Brit. t. 103.—Host. Gram. Austr. v. i. p. 18. t. 23.—Fl. Dan. t. 938.—Cavan. Ic. v. iii. p. 7. t. 213.—*Linn.* Suppt. p. 114.—Willd. Sp. Pl. v. i. pt. I. p. 463.—Sm. Fl. Brit. v. i. p. 151.; Engl. Fl. v. i. p. 175.—With. (7th ed.) v. ii. p. 201.—Hook. Brit. Fl. p. 56.—Schrad. Fl. Germ. v. i. p. 410.—Davies' Welsh Bot. p. 13.—Relh. Fl. Cant. (3rd ed.) p. 49.—Hook. Fl. Scot. p. 46.—Grev. Fl. Edin. p. 33.—Rev. G. E. Smith's Pl. of S. Kent, p. 8.—Fl. Devon. pp. 24 & 121.—Winch's Fl. of Northumbl. and Durh. p. 8.—Irv. Lond. Fl. p. 102.—Baines' Fl. of Yorksh. p. 116.—Mack. Catal. of Pl. of Irel. p. 16.; Fl. Hibern. p. 317.—*Ophiurus incurvatus*, Beauv.—Gray's Nat. Arr. v. ii. p. 87.—Lindl. Syn. p. 295.—*Lepturus incurvatus*, Macr. Man. Brit. Bot. p. 277.—Bab. Prim. Fl. Sarn. p. 116.—*Ægilops incurvata*, Linn. Sp. Pl. p. 1490.—Lightf. Fl. Scot. v. ii. p. 632.—*Gramen parvum marinum, spicâ loliaceâ*, John. Ger. p. 30*. n. 8.—Ray's Syn. p. 395.—*Gramen loliaceum maritimum, spicis gracilibus articulatis recurvis*, Moris. v. iii. p. 182. sect. 8. t. 2. f. 8.—*Gramen loliaceum maritimum, scorpioides, Sherardi*, Scheuchz. Agr. p. 42. t. 2. f. 1. A. B.

Fig. 1. A Spikelet; *a*, (on the left-hand side,) the two, combined, Glumes; *b*, and *a*, (on the right-hand side,) the two Paleæ.—Fig. 2. Germen, Styles, and Stigmas.—Fig. 3. A joint of the Rachis, showing the cavity in which the spikelet is embedded before and after it has flowered.

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* So named by the younger LINNÆUS, in memory of CHRISTIAN FRIES ROTTBOELL, a Professor of Botany at Copenhagen. † See fol. 36, note †.

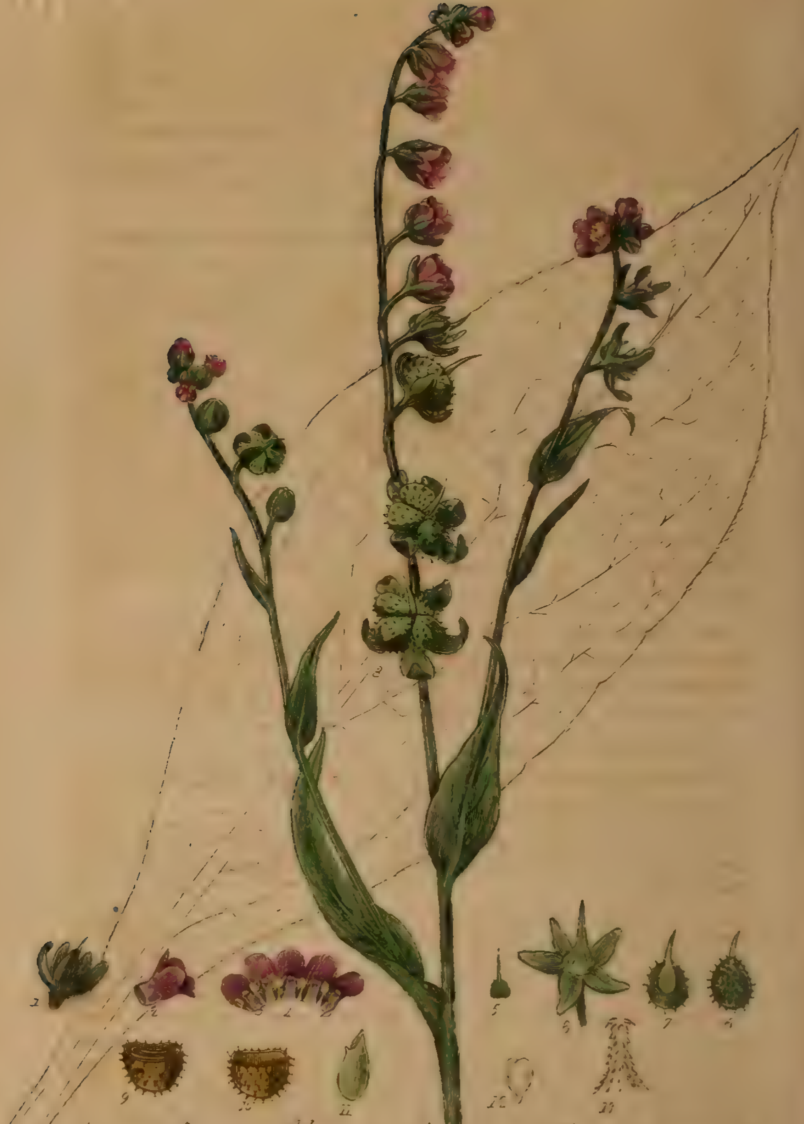
Localities.—On the sea-coast, in salt marshes, in various places.—*Cambridgeshire ;* Wisbeach, by the river-side, near a public house called the Anchor: Rev. R. Relhan.—*Cornwall ;* In the Vale of Menachan : N. B. G.—*Devon ;* Exmouth; Parsonage Style, Lympstone: *Fl. Devon.—Dorsetshire ;* In the waste ground at the back of the Promenade, near Weymouth. On the Chesil Beach between the Ferry and Portland; and on the Cliff between Weymouth and Landsford Castle: Rev. A. Bloxam.—*Durham ;* In Seaton Pasture: Mr. Backhouse. In the salt marshes of Tyne, Wear, and Tees: N. J. Winch, Esq.—*Essex ;* Walton Marshes: *Mag. Nat. Hist.—Gloucestershire ;* Salt Marsh, below King's Weston, near Bristol: Dr. Stokes. River-side: N. B. G. Frequent by the side of the Avon under Cook's Folly; also at Sea Mills: T. B. Flower, Esq.—*Kent ;* Upon the shore, and in dry salt marshes at Dimchurch; upon the shore, Folkstone West: Rev. G. E. Smith. Thames, by Gravesend; Marshes about Northfleet; and in the Marshes by the Medway, between Cuxton and Rochester: Mr. A. Irving.—*Lancashire ;* North Shore, by Bank Hall, near Liverpool: Dr. Bostock.—*Lincolnshire ;* Near Friestone: 1826; Dr. Howitt, in N. B. G.—*Norfolk ;* Yarmouth Denes: J. Paget. Breydon Bank; and in sandy ground by the river; not uncommon: *Hist. Yar.* At Sheringham: Rev. Dr. Goodenough.—*Northumberland ;* In the salt marshes of Tyne: N. J. Winch, Esq.—*Somersetshire ;* At Burnham; Berrow; and Steart: N. B. G.—*Suffolk ;* At the head of Lowestoft Broad : Mr. Woodward. —*Sussex ;* On the Sands just above high-water mark near Shoreham : J. D. Salmon, in *Phyt.—Yorkshire ;* Upon banks in the salt marshes at Coatham. Boghall, near Whitby : Mr. H. Baines. Humber Bank, near Hull: Aug. 1841; J. H. Thompson, Esq., Magdalen Hall.—WALES. *Anglesea ;* Between Friars and Penmon, just above the beach; Cemlyn and Dulas Bays: Rev. H. Davies. —*Denbighshire ;* Near the coast, E. and W. of Rhyddlan : N. B. G.—*Flintshire ;* Near the coast both E. and W. of Rhyddlan : N. B. G.—SCOTLAND. *Edinburghshire;* Musselburg Links : N. B. G.—*Fifeshire ;* Ballast-heaps, St. David's, probably introduced : N. B. G.—*Haddintonshire ;* Salt marshes near Aberlady Bay: G. Don.—*Kirkcudbright ;* Arbigland in Galloway: Rev. J. Lightfoot.—*Linlithgowshire ;* Shore of the Forth, some miles westward of Queensferry: Mr. Gentle, in N. B. G.—IRELAND. Near Irishtown; Portmarnock; banks of the river Lee, below Cork; South Isles of Arran, and other places, abundant: Mr. Mackay.

Annual.—Flowers in July and August.

Root fibrous. *Culms* branched, numerous, procumbent at the base, from 2 to 8 inches high, round, smooth, jointed, leafy. *Leaves* spreading, strap-shaped, short, pointed, single-ribbed, striated, rough on the upper surface, and at the edges. *Sheaths* slightly tumid, striated, smooth. *Stipula (ligula)* short and blunt. *Spikes* terminal, solitary, from 1 to nearly 3 inches long, more or less incurved, cylindrical, smooth. *Spikelets* (fig. 1.) so closely adpressed into the alternate hollows of the rachis, except when in flower, as to make the spike appear like a continuation of the culm. *Glumes* (see fig. 1. left-hand *a.*) more or less combined, strap-spear-shaped, striated, green, their margins white and membranous. *Paleæ* (see fig. 1, *b.* and right-hand *a.*) whitish, membranous, incurved at the edges, nearly as long as the glumes, and, like them, awnless.

It is sometimes drawn up weak by growing among other grasses, the culms are then more slender and upright, and the spikes nearly straight. In this state it is the *Rottbollia filiformis* of Mr. G. Don, and some other authors. It is found at Aberlady, in Scotland; and near Dublin, in Ireland; and it is thought it may probably be the more common variety in the south and east of England, as at Gravesend, &c.

For the specimen figured I am indebted to the kindness of J. H. Thompson, Esq. of Magdalen Hall, Oxford.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Cynoglossum officinale. Common Hounds-tongue. ♂

Mathews Del & Sc

Pub^d by W Baxter Botanic Garden Oxford [illegible]

CYNOGLO′SSUM *.

Linnean Class and Order. PENTA′NDRIA †, MONOGY′NIA.

Natural Order. BORAGI′NEÆ ‡, Juss. Gen. Pl. p. 128.—Sm. Gram. of Bot. p. 102.—Lindl. Syn. p. 163.; Introd. to Nat. Syst. of Bot. p. 241.—Rich. by Macgilliv. p. 440.—Loud. Hort. Brit. p. 527.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 306.—Mack. Fl. Hibern. p. 167.—Hook. Brit. Fl. (4th ed.) p. 413.—ASPERIFOLIÆ, *Linn.*—Sm. Engl Fl. v. i. p. 247.—SYRINGALES; subord. PRIMULOSÆ; sect. SOLANINÆ; type, BORAGINACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 982 & 1005.

GEN. CHAR. *Calyx* (see figs. 1 & 6.) inferior, of 1 sepal, in 5 deep, oblong, slightly pointed segments, permanent. *Corolla* (fig. 2 & 4.) of 1 petal, funnel-shaped, scarcely longer than the calyx; tube cylindrical, shorter than the limb, which is divided half-way down into 5 rounded segments (see fig. 4.); mouth about half closed with as many convex, horizontal valves. *Filaments* (see fig. 4.) 5, in the throat of the corolla, lower than the valves, and alternate with them. *Anthers* roundish. *Germens* (see fig. 5.) 4, depressed, horizontal. *Style* (see fig. 5.) central, awl-shaped, almost as long as the tube of the corolla, permanent (see fig. 6). *Stigma* small, notched. *Nuts (seeds*, SM.*)* (see figs. 3, 7, & 8.) 4, 1-celled, depressed, roundish, imperforate at the base, more or less rough with hooked prickles, sometimes bordered, all attached horizontally to a central columnar *receptacle*, formed of the hardened permanent, angular style (see fig. 6).

The 5-cleft *calyx;* the monopetalous, inferior, short, funnel-shaped *corolla*, its mouth half closed with rounded valves; and the 4 depressed, imperforate *nuts*, fixed to the *style*, or central column; will distinguish this from other genera in the same class and order.

Two species British.

CYNOGLO′SSUM OFFICINA′LE. Common Hound's-tongue. Great Hound's-tongue. Dog's-tongue.

SPEC. CHAR. Stem upright. Stem-leaves broadly spear-shaped, sessile, downy. Flowers without bracteas. Stamens shorter than the corolla.

Engl. Bot. t. 921.—Curt. Fl. Lond. t. 249.—Fl. Dan. t. 1147.—Woodv. Med. Bot. Suppl. t. 216.—Linn. Sp. Pl. p. 192.—Huds Fl. Angl. (2nd ed.) p. 80, *a.*—Willd. Sp. Pl. v. i. pt. II. p. 760, *a.*—Sm. Fl. Brit. v. i. p. 216.: Engl. Fl. v. i. p. 260.—With. (7th ed.) v. ii. p. 281.—Gray's Nat. Arr. v. ii. p. 349.—Lindl. Syn. p. 166.—Hook. Brit. Fl. p. 87.—Macr. Man. Brit Bot. p. 163.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 354.—Lightf. Fl. Scot. v. i. p. 133.—Sibth. Fl. Oxon.

Fig. 1. Calyx.—Figs. 2 & 4 Corolla.—Fig. 5. Germen, Style, and Stigma.—Fig. 3. The four Nuts.—Fig. 6, Calyx and Receptacle, after the nuts are detached.—Figs. 7 & 8. Two separate Nuts.—Fig. 9. Transverse section of a Nut.—Fig. 10. Ditto, with the seed taken out.—Fig. 11. A Seed.—Fig. 12. The Embryo.—Fig. 13. One of the Prickles of the Nut.—Figs. 9 to 13, *more or less magnified.*

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* From *kyon kunos*, Gr. a *dog;* and *glossa*, Gr. a *tongue;* from the shape of the leaves of many of the species.

† See fol. 48, note †.

‡ See fol. 102, *a.*

p. 69.—Abbot's Fl. Bedf. p. 41.—Thomps. Pl. of Berw. p. 22.—Davies' Welsh Bot. p. 20.—Purt. Midl. Fl. v. i. p. 109.—Relh Fl. Cant. (3rd edit.) p. 81.—Hook. Fl. Scot. p. 69.—Grev. Fl. Edin. p 45.—Fl. Devon. pp. 34 & 151.—Johnst. Fl. Berw. v. i. p. 53.—Winch's Fl. of Northumb. and Durh. p. 12.—Walker's Fl. of Oxf. p. 49.—Murr. North. Fl. p. 120.—Bab. Fl. Bath. p. 33.; Prim. Fl. Sarn. p. 63 —Irv. Lond. Fl. p. 137.—Luxf. Reig Fl. p. 17.—Baines' Fl. of Yorksh. p. 67.—Leight. Fl. Shropsh p. 100.—Gull. Pl of Banb. p. 5.—Beesl. Hist. of Banb. p. 584.—Mack. Catal Pl. of Irel. p. 21.; Fl. Hibern. p. 171.—*Cynoglossum*, Ray's Syn. p. 226.—*Cynoglossum majus vulgare*, Bauh Pin. p. 257.—Johns. Ger. p. 804, with a figure.—Park. Theatr. Bot. p. 511, with a figure.

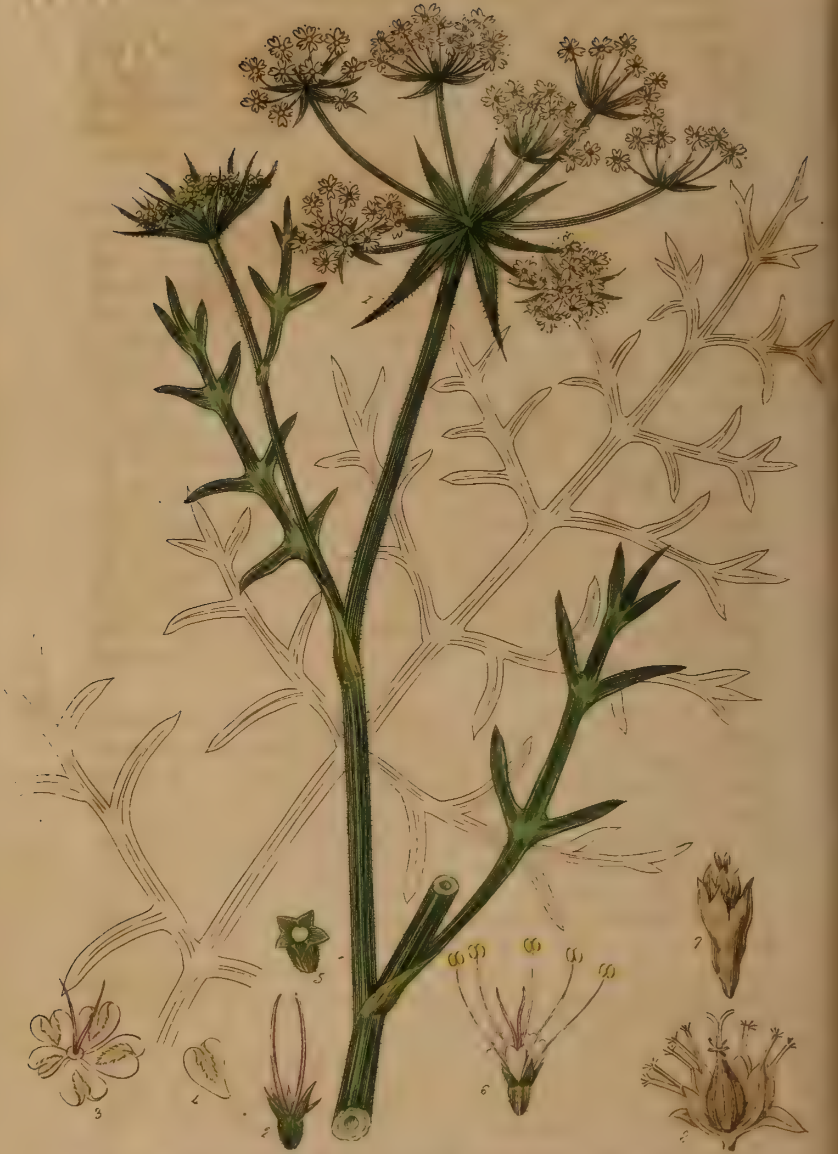
Localities.—In waste ground, and by road-sides; more or less common in most counties in ENGLAND; more rare in SCOTLAND.

Biennial.—Flowers in May and June.

Root fleshy, tapering, as thick as the finger or thumb, and from 6 inches to a foot or more long, blackish on the outside, whitish within, *Stem* 2 or 3 feet high, upright, branched, very leafy, furrowed, downy. *Root-leaves* 8 or 10 inches long, and 4 or 5 broad, nearly elliptical, on long petioles; *stem-leaves* much smaller, lower ones strap-spear-shaped, tapering at the base; upper ones sessile, wavy, spear-shaped, broadest at the base, all entire, with a strong mid-rib, and several lateral veins, and clothed on both sides with a silky down, which gives them a greyish colour. *Clusters* of flowers *(racemes)* terminating the stem and branches, hoary and downy. *Flowers* small, on short, downy, partial stalks, which are a little elongated after flowering, and all turned to one side. *Bracteas* none. *Segments of the Calyx* oblong, connivent. *Corolla* of a dull crimson, its valves purplish. *Nuts (carpels,* Don, *seeds,* Linn.*)* (see figs. 7 to 10.) egg-shaped, depressed, densely clothed with curiously barbed prickles, which are broad at the base, and taper upwards (see fig. 13). *Seeds* (see fig. 11.) single, smooth, somewhat egg-shaped, pointed.

The whole *herb* is downy, and very soft to the touch, of a dull green colour, with a disagreeable smell, like most of the species, much resembling that of mice. It is a native of Asia, Africa, and North America, as well as of Europe, in waste places, and by way-sides and margins of fields, and particularly near towns. It is reported to be deleterious, and the dingy lurid appearance of its leaves, peculiar to poisonous herbs of the narcotic kind, seems to favour the opinion; nor are facts wanting to confirm it. Morison, in his *Historia Plant. Oxon.* v. iii. p. 450, relates that a whole family at Oxford, who, by mistake, eat the boiled leaves of this plant for those of Comfrey (*Symphytum officinale*, t. 101.), were soon afterwards all seized with vomiting, stupor, sleepiness, &c., which symptoms continued alternately for almost forty hours, and with such severity, that one person died. Ray, however, says that Dr. Hulse frequently used a decoction of the roots for internal use, and at the same time applied them outwardly as a poultice to scrophulous tumours with safety and advantage; hence it appears that this part of the plant at least cannot be considered as an active poison. It is now discarded from common practice. Lightfoot says, that no quadruped except the goat will eat this plant; and we are told by M. Borfux, that if it is gathered when in full vigour, bruised with a hammer, and laid in any place frequented by rats and mice, they will immediately forsake the premises. The Caterpiller of the Scarlet Tyger Moth (*Phalæna Dominula*, Linn.; *Callimorpha Dominula*, Leach), feeds on this plant.

It is sometimes found with a white flower.



Echinophora Spinosa Prickly Sea-Parsnep. ♃

Mathews del & sc
Pub.d by W. Baxter Botanic Garden Oxford 1842

ECHINO'PHORA *.

Linnean Class and Order. Penta'ndria †, Digy'nia.

Natural Order. Umbelli'feræ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 515.--Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—Umbellatæ, *Linn.* — Rosales; sect. Angelicinæ; type, Smyrniaceæ; Burn. Outl. of Bot. v. ii. pp. 614, 770, and 780.

Gen. Char. *Flowers* separated; those of the circumference numerous, sterile (see fig. 6.); the outermost (see fig. 3.) irregular, often neuter; central (see fig. 2.) solitary, fertile. *Calyx* (see figs. 2 & 5.) superior, of 5, nearly equal, spinous-pointed, rigid, permanent teeth. *Petals* in the outermost flowers (see figs. 3 & 4.) unequal, each unequally heart-shaped, from the strong inflexion of the jagged point (see fig. 4.); in the rest of the barren ones equal inflexed (see fig. 6.); in the central one (fig. 2.) wanting. *Filaments* (see fig. 6.) 5, in the flowers of the circumference only, longer than the petals, thread-shaped, inflexed, equal. *Anthers* of 2 roundish lobes. *Germen* (see fig. 5.) inferior, turbinate, in the flower of the circumference abortive; in the central one (fig. 2.) imbedded in the base of the flower. *Styles* upright, somewhat unequal; in the central flower (fig. 2.) longest, awl-shaped, a little recurved, permanent. *Stigmas* blunt. *Fruit* (see figs. 7 & 8.) egg-shaped, nearly round, inclosed in a hollow receptacle, furnished with a short protruded beak. *Carpels* with 5 depressed, equal, undulated ribs. *Interstices* with single *vittæ*, which are covered by a cobwedded membrane. *Universal* and *partial involucrums* constantly of many leaves.

The 5-toothed *calyx;* the emarginate *petals* with an inflexed point, the outer ones larger and bifid; the elongated, filiform *styles* of the fertile flowers; the egg-shaped *fruit*, inclosed in a hollow receptacle, with a short protruded beak; the *carpels* with 5 waved, equal, depressed ribs; and the *interstices* with single vittæ, which are covered with a cobwebbed membrane; will distinguish this from other genera in the same class and order.

One species British.

ECHINO'PHORA SPINO'SA. Spinous Sea-parsnip. Prickly Samphire.

Spec. Char. Plant glaucous, finely downy. Leaves bipinnatifid; segments awl-shaped, entire, stiff, spinous-pointed. Involucral leaves entire, spinous.

Fig. 1. Universal Involucrum.—Fig. 2. A Fertile Flower.—Fig. 3. A neutral one.—Fig. 4. A Petal of ditto.—Fig. 5. Germen and Calyx.—Fig. 6. A Sterile Flower.—Fig. 7. A Fruit, enclosed in the ripened involucellum.—Fig. 8. The same, with the involucellum opened.

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* From *echinos*, Gr. a *hedge-hog;* and *phero*, Gr. *to bear;* in allusion to the strong stiff spines of the involucrum.

† See fol. 48, note †.

‡ See fol. 235, *a*.

Engl. Bot. t. 2413.—Fl. Græc. v. iii. p. 58. t. 265.—Cavan. Ic. v. ii. p. 24. t. 127.—Linn. Sp. Pl. p. 344.—Huds. Fl. Angl. (2nd ed.) p. 114.—Willd. Sp. Pl. v. i. pt. II. p. 1379.—Sm. Fl. Brit. v. i. p. 293. ; Engl. Fl. v. ii. p. 37.—With. (2nd ed.) v. i. p. 268.—Gray's Nat. Arr. v. ii. p. 510.—Lindl. Syn. p. 126.—Hook. Brit. Fl. p. 135.—Macr. Man. Brit. Bot. p. 106.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 371.—Irv. Lond. Fl. p 233.—*Echinophora maritima spinosa*, Tourn. Inst. p. 656.—Dill. in Ray's Syn. p. 220.—Blackst. Sp. Bot. p. 18.—*Crithmum spinosum*, Johns. Ger. p. 533. fig. 2.—Ray's Syn. (2nd ed.) p. 114.—*Pastinaca marina*, Bauh. Hist. v. iii. pt. II. p. 196, with a figure.—Park. Theatr. Bot. p. 1286. f. 3.

LOCALITIES.—On sandy sea-shores.—*Dorsetshire ;* Near Weymouth ; on the Chesil Beach between the Ferry and Portland ; and on the cliff between Weymouth and Landsford Castle : Aug. 1837 ; Rev. A. BLOXAM.—*Kent ;* "Between Feversham and Sea-Salter : BLACKSTONE. Near Sandwich : GERARDE. In both these places I have sought for it in vain :" L. W. DILLWYN, in *Botanist's Guide*. GERARDE also says it grows between Whitstable and the Isle of Thanet.—*Lancashire ;* At Roosebeck Low Furness : RAY. Mr. WOODWARD could not find it there.

Perennial.—Flowers in July.

Root spindle-shaped, long and fleshy. *Stem* upright, from 6 inches to a foot high, glaucous, furrowed, finely downy, and very much branched, branches spreading in every direction. *Leaves* rigid, alternate or opposite, doubly pinnatifid, their segments narrow, channelled, entire, stiff, and spinous-pointed. *Umbels* terminal, large, of several *partial umbels*. *Universal Involucrum* (see fig. 1.) of many undivided leaves, about as long as the stalks of the *universal umbel ; partial involucrums* of several, much smaller leaves, which finally become confluent with the receptacle and with each other. *Flowers* white, or pale flesh-coloured, numerous ; those in the margin radiant, and sometimes neuter (see fig. 3.) *Fruit* (see fig. 8.) egg-shaped, encompassed with the spreading hardened, partial *involucrum*, and crowned with the thickened stalks and permanent calyx of the faded sterile flowers.—There are rudiments of 2 *seeds*, though only one comes to perfection. See *Smith's Engl. Fl.*

The roots are reported to be eatable, having the flavour of Parsnep, with a stimulating and diurctic quality ; and it is also said that the young leaves afford a very wholesome and excellent pickle. It is a native of the sea-coast of Europe, especially in the Mediterranean Sea. From its not having, for many years, been found in the localities recorded for it by GERARDE, RAY, and BLACKSTONE, it was thought to be extinct in Britain, until the Rev. ANDREW BLOXAM, M. A. of Rugby, in Warwickshire, discovered it on the coast of Dorset, in 1837, as stated above.

The drawing for the annexed plate was made from a specimen preserved in the SHERARDIAN *Herbarium* in the Oxford Garden.

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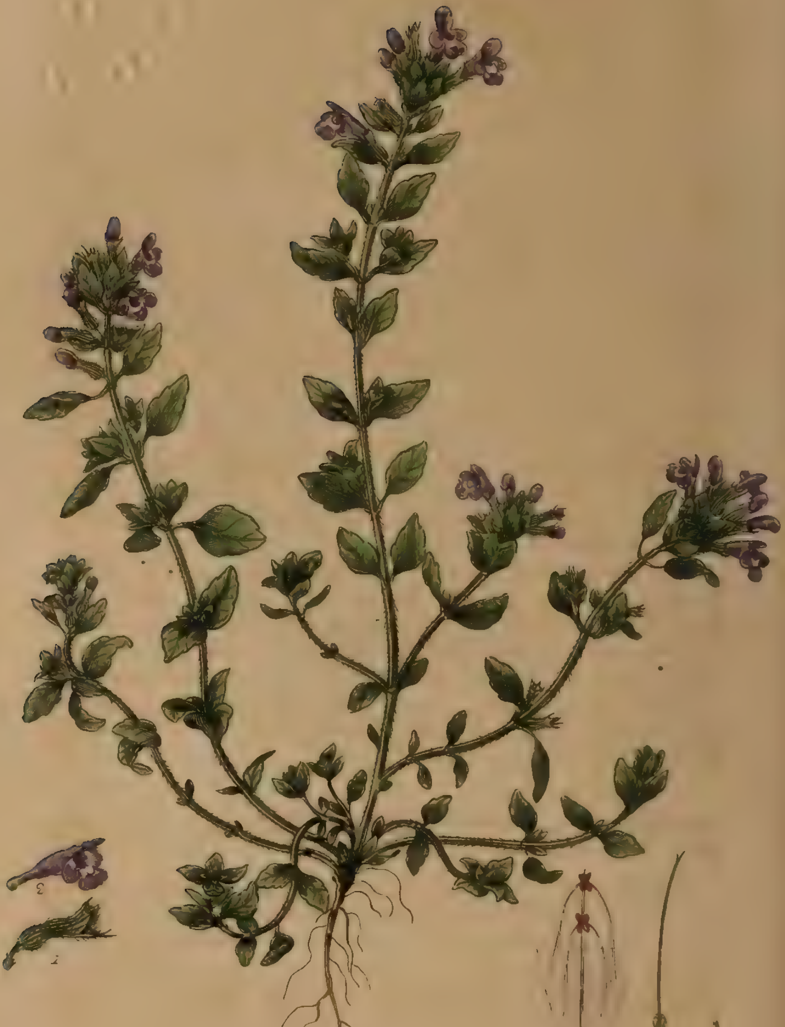

Acinos vulgaris. Basil Thyme &c.

A'CINOS[*].

Linnean Class and Order. DIDYNA'MIA[†], GYMNOSPE'RMIA[‡].

Natural Order. LABIA'TÆ[§], Juss. Gen. Pl. p. 110.—Sm. Gram. of Bot. p. 99.; Engl. Fl. v. iii. p. 63.—Bentham, in Bot. Regist. (1829.)—Lindl. Syn. p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Rich. by Macgilliv. p. 439.—Loud. Hort. Brit. p. 528.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 665.—Mack. Fl. Hibern. p. 209.—Hook. Brit. Fl. (4th edit.) p. 415.—VERTICILLATÆ of *Linnæus*.—SYRINGALES; suborder, PRIMULOSÆ; sect. MENTHINÆ; type, MENTHACEÆ or LABIATÆ; subtype, SATURIDÆ; Burn. Outl. of Bot. v. ii. p. 900, 958, 968, & 972.

GEN. CHAR. *Whorls* few-flowered. *Calyx* (fig. 1.) of 1 sepal, tubular, 13-ribbed, gibbous at the base below, 2-lipped, closed at the throat with converging hairs; upper lip broadish, flattish, with 3 sharp teeth; lower lip of 2 longer, equal, narrow, awl-shaped teeth. *Corolla* (fig. 2.) of 1 petal, ringent; tube as long as the calyx; throat short, but little dilated; upper lip shortest, flat, erect, blunt, with a small notch; lower lip longer and broader, spreading, in 3 deep blunt lobes, the middle lobe the broadest, slightly emarginate. *Filaments* (see fig. 3.) 4, didynamous, shorter than the corolla, slender, incurved. *Anthers* distinctly 2-lobed. *Germen* (see fig. 4.) 4-cleft. *Style* thread-shaped. *Stigma* in 2 acute segments. *Seeds* (see fig. 5.) 4, small, roundish, in the bottom of the closed calyx.

The few-flowered *whorls;* the 2-lipped, 13-ribbed, tubular *calyx*, gibbous at the base below, with 5 unequal teeth, and a hairy throat; and the *corolla* with the upper lip nearly flat, and the lower one 3-lobed, with the middle lobe nearly entire; will distinguish this from other genera in the same class and order.

It differs from *Thymus* (t. 127.) in the stamens being ascending and incurved, not distant; and from that and *Calamintha* in the gibbous base of the calyx.

One species British.

A'CINOS VULGA'RIS. Common Basil-Thyme. Small Wild Basil. Basil Balm. Stone Basil.

SPEC. CHAR. Stems ascending, branched. Leaves on short petioles, egg-shaped, acute, slightly serrated, more or less ciliated at the base. Flowers about 6 in a whorl, on simple stalks.

Pers. Syn. Pl. v. ii. p. 131.—Gray's Nat. Arr. v. ii. p. 383.—Hook. Brit. Fl. p. 279.—Bab. Fl. Bath. p. 40.—Irv. Lond Fl. p. 134.—Luxf. Reig. Fl. p. 52.—Leight. Fl. of Shropsh. p. 289.—*A'cinos Thymoides*, Mœnch. Meth. p. 407.—*A'cinos multis*, Ray's Syn. p. 238.—Bauh. Hist. v. iii. pt. II. p. 259. f. —*Melissa Acinos*, Benth. Lab. p. 389.—Lindl. Syn. (2nd ed.) p. 201.—Macr. Man. Brit. Bot.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. Stamens and Pistil.—Fig. 4. Germen, Style, and Stigma.—Fig. 5. A Seed.—*All, more or less, magnified.*

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[*] From *akinos*, the Greek name of a balsamic plant now unknown. DON.

[†] See fol. 31, n. †.

[‡] See fol. 31, n. ‡.

[§] See fol. 86, *a.* & 94, *a.*

p. 182.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 782.—Bab. Prim. Fl. Sarn. p. 72.—Cow. Fl. Guide, p. 50.—Beesley's Hist. of Banb. p. 586.—*Thymus Acinos*, Linn Sp. Pl. p. 826.—Engl. Bot. t. 411.—Curt. Fl. Lond. t. —Huds. Fl. Angl. (2nd ed.) p. 263.—Willd. Sp. Pl. v. iii. pt. i. p. 142.—Sm. Fl. Brit. v. ii. p. 641; Engl. Fl. v. iii. p. 109.—With. (7th edit.) v. iii. p. 721.—Lindl. Syn. p. 205.—Lightf. Fl. Scot. v. i. p. 319.—Sibth. Fl. Oxon. p. 189.—Abbot's Fl. Bedf. p. 132.—Purt. Midl. Fl. v. i. p. 280.—Relh. Fl. Cant. (3rd edit.) p. 246.—Hook. Fl. Scot. p. 185.—Rev G. E. Smith's Pl. of S. Kent, p. 32.—Fl. Devon. pp. 101 & 146.—Winch's Fl. of Northumb. and Durh. p. 40.—Walker's Fl. of Oxf. p. 171.—Perry's Pl. Varvic. Sel. p. 50.—Baines' Fl. of Yorksh. p. 84.—Gulliv. Pl. of Banb. p. 12.—*Ocymum sylvestre*, Johnson's Gerarde, p. 675. f. 1.—*Clinopodium minus, sive vulgare*, Park. Theatr. Bot. p. 21. f. 1.—*Small Wild Basil*, Pet. H. Brit. t. 32. f. 10.

Localities.—On dry hills, waste places, and in cultivated fields, especially on a sandy, gravelly, or chalky soil. Not uncommon in ENGLAND and WALES; more rare in SCOTLAND; not found in IRELAND?

Annual.—Flowers in July and August.

Root small, somewhat woody, fibrous. *Stems* from 6 inches to a foot long, spreading, ascending, oppositely branched from the base, bluntly 4-angled, clothed, all over, with short, soft, white, recurved hairs, which are most dense on two opposite sides, alternating between the joints. *Leaves* opposite, on short winged petioles, egg-shaped, acute, the upper ones somewhat approaching to spatulate, all bluntly serrated above the middle, their margins slightly revolute, and more or less ciliated; dark green, and slightly hairy above, paler beneath, with hairy veins, and very minute, mealy glands. *Flowers* on short, simple, hairy pedicels, in distant, axillary, 6- to 8-flowered whorls, with very minute ciliated *bracteas* at their base. *Calyx* (fig. 1.) tubular, protuberant at the base on the under side, covered with very minute, resinous glands; 13-ribbed, the ribs with a single row of short, white, slightly incurved bristles; 2-lipped, the segments unequal, 3 upper ones shortest, triangular, recurved; 2 lower ones awl-shaped, straighter or incurved, all fringed on the margins; mouth closed with an appendage of long white hairs, which also appear on the interior surface of the 3 upper segments, whilst that of the 2 lower ones is smooth. *Corolla* (fig. 2.) hairy, bluish-purple, upper lip short, blunt, emarginate; lower lip 3-lobed, lateral lobes rounded, entire, central one broader, with a shallow notch, and a roundish, dark-purple spot in front near the base; throat white, with short, thick, white hairs within on the lower side. *Seeds* oblong, 3-sided, smooth.

It is sometimes found with white flowers.

Acinos vulgaris is a native of other parts of Europe besides Britain, as Sweden, Portugal, Naples, Greece, about Petersburgh, and of the Caucasus.

The whole plant has a pleasant aromatic smell, but commonly much weaker than in *Thymus Serpyllum*, t. 127.

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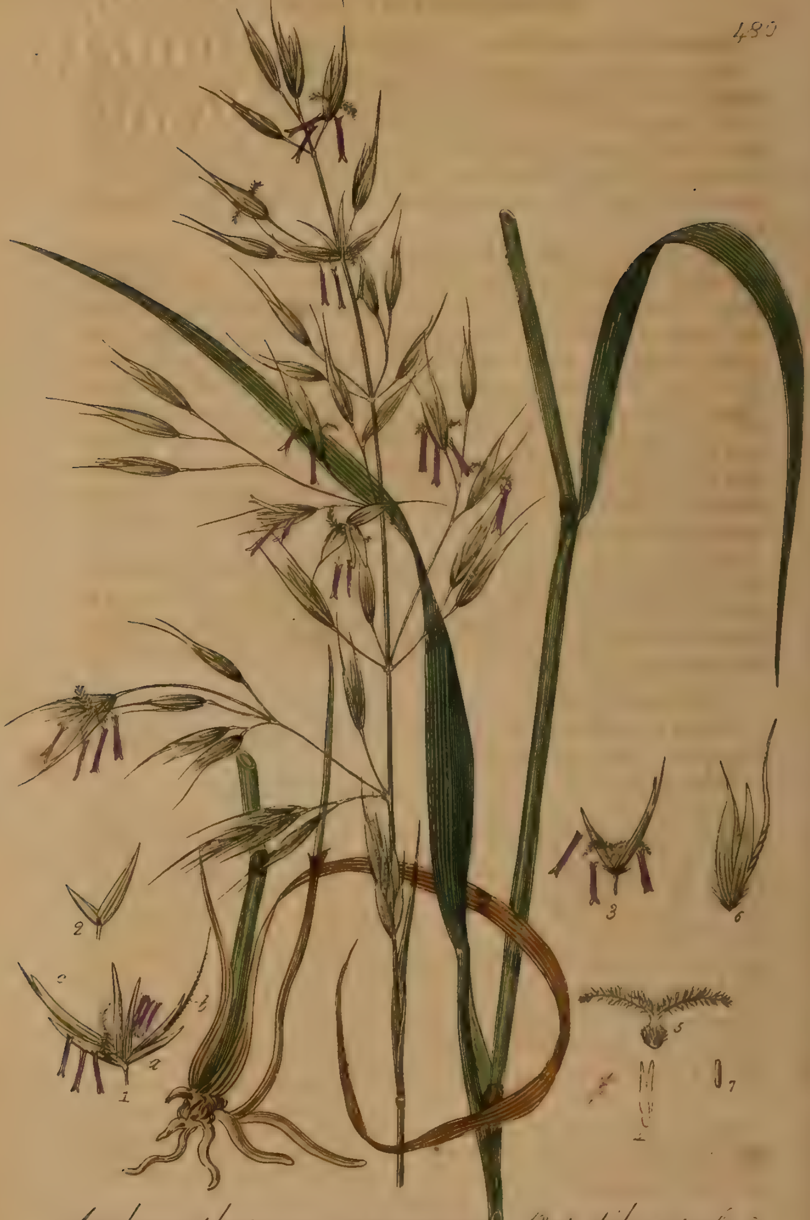

Arrhenatherum avenaceum. Oat-like graſs.

Mathews Del & Sc   Pub.d by W. Baxter Botanic Garden Oxford [illegible]

ARRHENATHE′RUM*.

Linnean Class and Order. TRIA′NDRIA †, DIGY′NIA.

Natural Order. GRAMI′NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th edit.) p. 426.—GRAMINA, *Linn.*—GRAMINALES; sect. FESTUCINÆ; type, AVENACEÆ; Burn. Outl. of Bot. v. i. pp. 359 and 369.

GEN. CHAR. *Inflorescence* panicled. *Panicle* loose. *Spikelets* (see fig. 1.) 2-flowered; upper floret perfect, lower with stamens only. *Calyx* (fig. 2.) of 2 unequal, awnless glumes, shorter than the paleæ, 2-flowered. *Corolla* (fig. 3.) of 2 unequal paleæ, the larger emarginate, of the staminiferous floret, with a twisted awn above the base; of the perfect floret (see fig. 3.) with a short, straight bristle below the point; the smaller narrower, and awnless. *Nectary* (fig. 4.) a cloven, smooth, membranous scale. *Filaments* (see fig. 3.) 3 in each floret. *Anthers* notched at each end. *Styles* (see fig. 5.) short, widely spreading. *Stigmas* (see fig. 5.) large, feathery. *Seed* (fig. 7.) coated with the hardened, permanent corolla (see fig. 6).

The loose *panicle*; the 2-flowered *calyx*, of 2 unequal glumes; the lowermost floret with stamens only, and a long twisted awn above the base, and the upper one perfect with a short, straight bristle below the point; will distinguish this from other genera in the same class and order.

One species British.

ARRHENATHE′RUM AVENA′CEUM. Common Oat-like Dog-grass. Oat-like Soft-grass.

SPEC. CHAR.

ARRHENATHE′RUM AVENA′CEUM, Beauvois.—Lindl. Syn. p. 305.—Hook. Brit. Fl. p. 38.—Macr. Man. Brit Bot. p. 267.—Bab. Prim. Fl. Sarn. p. 108.—Dick. Fl. Abred. p. 23.—Irv. Lond Fl. p. 97.—Luxf. Reig. Fl. p. 8.—Leight. Fl. of Shropsh. p. 61.—Beesley's Hist. of Banb. p. 591.—Mack. Fl. Hibern. p. 302.—*Arrhenathérum elatius*, Gray's Nat. Arr. v. ii. p. 132.—Bab. Fl. Bath. p. 57.—*Holcus avenaceus*, Engl. Bot. t 813.—Knapp's Gram. Brit. t. 39.—Greaves' Brit. Grasses, t. 48.—Sm. Fl. Brit. v. i. p. 90.; Engl. Fl. v. i. p. 108.—Sibth. Fl. Oxon. p. 40.—Thomps. Pl. of Berw. p. 10.—Davies' Welsh Bot. p. 9.—Hook. Fl. Scot. p. 28.—Grev. Fl. Edin. p. 18.—Sincl. Hort. Gram. Wob. (3rd edit.) p. 169, with a plate.—Fl. Devon. pp. 13 & 122.—Johnst. Fl. Berw. v i. p 22.—Winch's Fl. of Northumb. and Durh. p. 6.—Walker's Fl. of Oxf. p. 21.—Cow. Fl. Guide, p 34.—Baines' Fl. of Yorksh. p. 119.—Gull. Pl. of Banb. p. 2.—Mack. Catal. Pl. of Irel. p. 13.—*Avena elatior* Linn. Sp. Pl. p. 117.—Schreb. Gram. v. i. p. 25. t. 1.—Curt. Fl Lond. t. 191.—Leers' Fl. Herb. p. 40. t. 10. f. 4.—Huds. Fl. Angl. (2nd ed.) p. 53.—Willd. Sp. Pl. v. i. pt. 1. p. 443.—With. (7th ed.) v. ii. p. 192.—

Fig. 1. A Spikelet; *a*, the Calyx; *b*, the Staminiferous Floret; *c*, the perfect one.—Fig. 2. Calyx —Fig. 3. A perfect Floret.—Fig. 4. Nectary.—Fig. 5. Germen, Styles, and Stigmas.—Fig. 6. A Ripe Floret inclosing the Seed.—Fig. 7. A Seed.—*All a little magnified.*

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* From *arren*, Gr. *male;* and *ather*, Gr, an *awn*.

† See folio 56, note †.

Lightf. Fl. Scot. v. i. p. 105.—Mart. Fl. Rust. t. 7.—Abbot's Fl. Bedf. p. 25.—Relh. Fl. Cant. (3rd ed.) p. 45.—Purt. Mid. Fl. v. i. p. 84.—Murr. North. Fl. p. 78.—*Gramen nodosum, avenaceâ panicula*, Ray's Syn. p. 406.—Scheuchz. Agrost. p. 237. t. 4. f. 27, 28.—*Gramen avenaceum, panicula acerosâ, semine papposa*, Dill. in Ray's Syn. p. 406.—*Gramen caninum nodosum*, Johns. Ger. p. 23, with a figure.—*Gramen avenaceum elatius, jubâ longâ splendente*, Moris, v. iii. p. 214. sect. 8. t. 7. f. 37.—*Gramen avenaceum elatius, radice tuberculis prædita*, Moris. ibid. f. 38.

Localities.—In pastures, hedges, and by road-sides; common.

Perennial.—Flowers in June and July.

Root fibrous, downy, knotty, from the swollen joints of the base of the culm. *Culm* from 2 to 3 feet high, or more, smooth, simple, leafy, jointed, the joints usually smooth, but sometimes downy. *Leaves* of the culm 6 or 7 inches to a foot long, and about a quarter of an inch broad, striated, rough, especially at the margins, their upper surface with a few scattered, slender, white hairs. *Sheaths* long, striated, smooth, with a few long, deflexed hairs on the margin at their summits, just below the stipula. *Stipula (ligula)* short, blunt. *Panicle* long, upright, or a little drooping, loose, shining; its branches numerous, rough, unequal, half-whorled, and directed to one side. *Calyx-glumes* nearly white, almost transparent; the *inferior one* smallest, spear-shaped, single-nerved, nearly smooth, with a rough keel; *superior one* larger, about as long as the florets, pointed, bifid, with 3 rough, reddish-green ribs. *Paleæ of the Corolla* of nearly the same shape as the glumes of the calyx, but larger; the lower floret (fig. 1, *b*.) least perfect, but most conspicuously awned; their inner paleæ narrow, membranous, and flat. *Anthers* strap-shaped, cloven, hanging out at one side. *Styles* very short. *Stigmas* (fig. 5.) long, spreading horizontally, feathery on the upper side. *Seed* (fig. 7.) nearly cylindrical, coated with the hardened corolla (see fig. 6).

Arrhenathérum bulbósum, of Dumortier, Lindley, and some other authors, differs from this only in being a larger plant with a bulbous base to the culm, and occasionally hairy joints.

The produce of this grass is said to be very great, but it is so excessively bitter as to be unpalatable to cattle in general; and the bulbous-rooted variety is a very troublesome weed when it occurs on arable land; nevertheless, the animated description of Miss Kent, has conferred on it no inconsiderable degree of interest. "I have seen it," observes that elegant writer, (in *Loud. Mag. Nat. Hist.* v. i. p. 237.), "six feet high, with leaves two feet long, and more than one inch wide, with its panicle of flowers gently drooping to one side, at least one foot six inches in length, and so finely polished, that, but for their green colour, we might think it was composed of silver oats. Yet it is *not* green; neither is it white, nor gold-colour, nor purple, but it is a union of all these: it is the offspring of silver and of gold, of the amethyst and the emerald. It is, indeed, very variable; but, in the full pride of its beauty, this grass is truly magnificent. The light purple pyramids that quiver in every field and meadow, must be well known to every reader. In fine, the student who has leisure to investigate their beauties, will find the family of grasses peculiarly interesting, and much more various and beautiful than, from the apparent homeliness of many, they might be supposed to be."

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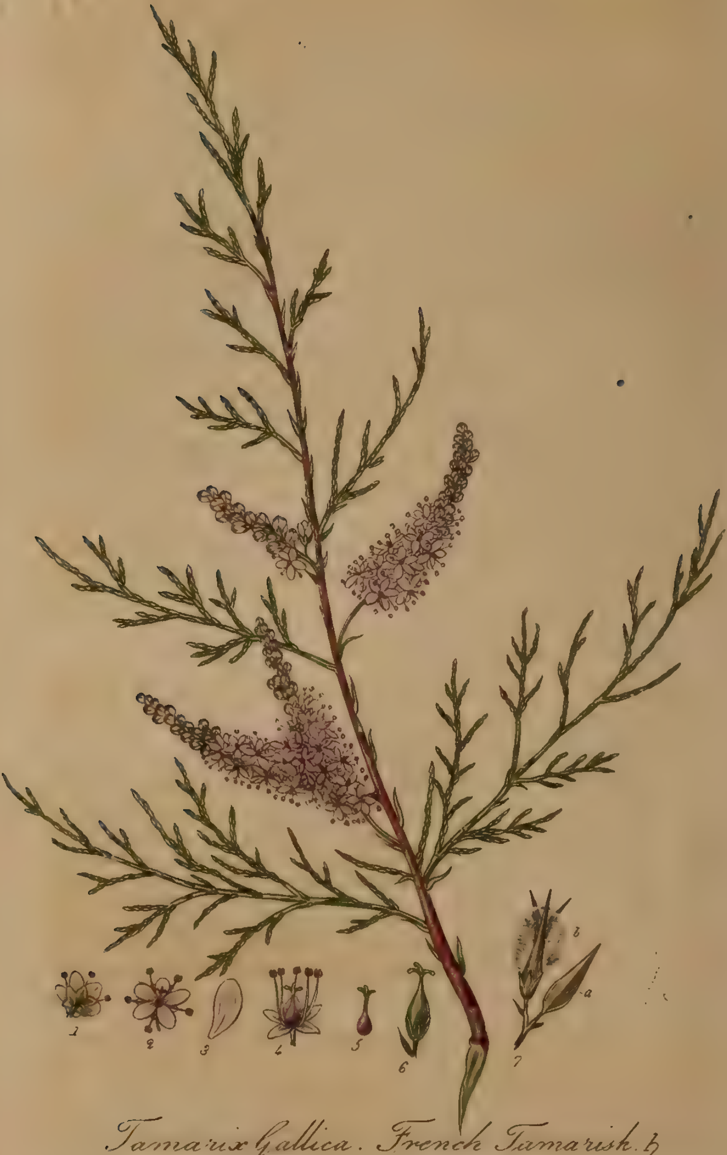

Tamarix Gallica. French Tamarisk. ♄

I. Hirt. D. & S.

Pub^d by W. Baxter, Botanic Garden Oxford. 18[illegible]

TA′MARIX *.

Linnean Class and Order. PENTA′NDRIA †, TRIGY′NIA.

Natural Order. TAMARISCI′NEÆ, *Desvaux.*—Lindl. Syn. p. 61.; Introd. to Nat. Syst. of Bot. p. 158.—Rich. by Macgilliv. p. 527.—Loud. Hort. Brit. p. 514.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 725.—Hook. Brit. Fl. (4th ed.) p. 406.—TAMARICA′CEÆ, Loud. Encycl. of Trees and Shrubs, p. 457.—PORTULACEÆ, Juss. Gen. Pl. p. 312.—SUCCULENTÆ, *Linn.*—ROSALES; subord. RHŒADOSÆ; sect. CISTINÆ; subsect. CISTIANÆ; type, TAMARICACEÆ; Burn. Outl. of Bot. pp. 614, 784, 792, 798, & 805.

GEN. CHAR. *Calyx* (see figs. 1 & 4.) inferior, of 1 sepal, in 4 or 5 deep, upright, permanent segments, half the length of the corolla. *Corolla* (see figs. 1 & 2.) of 4 or 5 inversely egg-shaped, blunt, concave, spreading petals. *Filaments* (see figs. 2 & 4.) 4 or 5, hair-like, inserted into the calyx, opposite to its segments. *Anthers* incumbent, roundish. *Germen* (fig. 5.) superior, egg-shaped, pointed. *Style* none. *Stigmas* 3, long, divaricate, glandular and oblique at the apex. *Capsules* (figs. 6 & 7.) egg-oblong, pointed, triangular, longer than the calyx, of 1 cell, and 3 valves. *Seeds* numerous, upright, inserted nearly at the base of the valves, or almost in the centre of the capsule, tufted; tuft composed of numerous simple hairs arising from the apex.

The 4- or 5-cleft *calyx;* the *corolla* of 4 or 5 petals; the long, sessile *stigmas*, glandular and oblique at the apex; and the *seeds* with numerous simple hairs at their summit; will distinguish this from other genera in the same class and order.

One species British.

TA′MARIX GALLICA. French Tamarisk,

SPEC. CHAR. Leaves minute, clasping the stem or branch, adpressed, pointed. Spikes lateral, somewhat panicled, slender, much longer than broad. Stamens five.

Engl. Bot. t. 1318.—Fl. Græc. v. iii. p. 85. t. 291.—Linn. Sp. Pl. p 386.—Willd, Sp. Pl. v. i. pt. II. p. 1498.—Sm. Fl. Brit. v. i. p. 338.; Eng. Fl. v. ii. p. 111.—With. (7th ed.) v. ii. p. 403.—Gray's Nat. Arr. v. ii. p. 554.—Lindl. Syn. p. 62.—Hook. Brit. Fl. p. 143.—Macr. Man. Brit, Bot. p. 82.—Hunt. Evel. Silv. p. 344.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 726.—Loud. Arb. et Frutic. Brit. v. ii. p. 947. f. 671.; Encycl. of Trees and Shrubs, p. 458. f. 819.—Tr. of Linn. Soc. v. iii. p. 333.—Rev. G. E. Smith's Pl. of S. Kent, p. 17.—Irv. Lond. Fl. p. 160.—Bab. Prim. Fl. Sarn. p. 38.—*Tamarix floribus pentandris*, Linn. Hort. Cliff. p. 111.—Mill. Ic. p. 175. t. 262. f. 1.—*Tamarix narbonensis*, Dalech. Hist. p. 180, with a figure.—*Tamarix major, sive arborea narbonensis*, Bauh. Hist. v. i. pt. II. p. 350, with a figure.—*Tamariscus narbonensis*, Tourn. Inst. p. 661.—Johns. Ger. p. 1378. f. 1.—*Tamariscus folio tenuiore*, Park. Theatr. Bot. p. 1479. f. 1.—*Myrica sylvestris prima*, Clus. Hist. v. i. p. 40, with a figure.

Fig. 1. Back view of a Flower, showing the Calyx.—Fig. 2. Front view of ditto.—Fig. 3. A Petal.—Fig. 4. Calyx, Stamens, and Pistils.—Fig. 5. Germen and Stigmas.—Fig. 6. A Capsule.—Fig. 7. *a.* an entire Capsule; *b.* Ditto, with the valves separating and discharging the seeds.—*All magnified.*

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* From its growing on the banks of the *Tamaris*, now *Tambro*, on the borders of the Pyrenees. DON.

† See folio 48, note †.

LOCALITIES.—On the rocks, and cliffs, and sandy shores, of the southern and western coasts of England.—*Cornwall;* Plentiful on St. Michael's Mount, and everywhere about the Lizard Point, but chiefly on the banks of earth called hedges: Mr. GIDDY. Apparently planted in every station observed: Mr. H. C. WATSON, in N. B. G.—*Hants;* On the beach near Hurst Castle, and Freshwater: Dr. PULTENEY.—*Kent;* It forms the ornament of Sandgate, flourishing upon its sandy banks, and flowering thrice within the year: Rev. G. E. SMITH.—*Suffolk;* By Languard Fort: Sir T. G. CULLUM.—*Sussex;* On the Cliff to the East of Hastings: Rev. Dr. GOODENOUGH. Also West of the old town, doubtless planted: *Bot. of Suss.* and N. B. G.

A Shrub.—Flowers in July.

Root branched. *Stem* slender, from 5 to 14 or 16 feet high, sometimes higher, very much branched; older branches long, slender, twiggy, drooping, red, and shining, with scattered, sessile scales; younger branches herbaceous, slender, bright green. *Leaves* very small, egg-shaped, or egg-spear-shaped, pointed, scattered or imbricated, smooth, deciduous, with a loose spur at the base. *Spikes* lateral and terminal, somewhat panicled, dense, cylindrical, slender, of numerous, nearly sessile, reddish or white, bracteated, scentless *flowers*.

This elegant Shrub is frequent in sandy places in France, on the shores of the Mediterranean Sea, and of the Atlantic Ocean, as far as Poictiers; also found upon the banks of rivers in the South of Europe, North of Africa, and West of Asia. It is likewise a native of Tartary, Barbary, the Himalayas, and Japan. It is the *Myrica* of the Greeks, and the *Tamarix* of the Latins; and DIOSCORIDES mentions it as being effective in various diseases. Its bark is slightly bitter, and astringent; and its ashes contain a large quantity of Sulphate of Soda. In the South of Russia, and in Tartary, it assumes a great variety of form , according to the soil and situation; the tops of the dwarf plants are there eaten by sheep, in preference to all other food; and the stems of the larger ones are used as handles for whips. EVELYN tells us, that it was considered of old one of the unfortunate trees, and under malediction, and therefore used for wreaths to put round the heads of malefactors. He says also, that drinking-canns were made of the wood: and it is spoken of as affording brooms to the housewife. W. BROWNE says—

> "Amongst the rest the tamariske there stood,
> For housewives' besomes onely knowne most good."

The *Tamarisk* has been celebrated in the verses of most of the ancient poets. HOMER mentions it as the tree against which ACHILLES laid his spear before he plunged into the Xanthus, to pursue the flying Trojans.

> "So plunged in Xanthus by Achilles' force,
> Roars the resounding surge with men and horse.
> His bloody lance the hero casts aside,
> (Which spreading *tamarisks* on the margin hide)."
> *Pope's Hom. Il.* B. xxi. l. 18—21.

It is introduced in the Pastorals of THEOCRITUS; and VIRGIL has noticed it several times in his Eclogues. Its name may also be found in several of the poems of OVID.

The TAMARISCINEÆ are polypetalous dicotyledonous *shrubs*, with rod-like branches; small scale-like leaves; a 4- or 5-parted, permanent *calyx*, imbricated in the bud; a *corolla* of 4 or 5 petals, inserted into the base of the calyx; with 4, 5, 8, or 10 *stamens*, which are either free or united by their filaments. The *ovary* is free; the *capsule* 3-sided, 3-valved, 1-celled, and many-seeded, with 3 *placentas (receptacles)* at the base of the cell, or along the middle of the valves. *Seeds* comose (tufted), without *albumen*.

Tamarix is the only British genus in the order.

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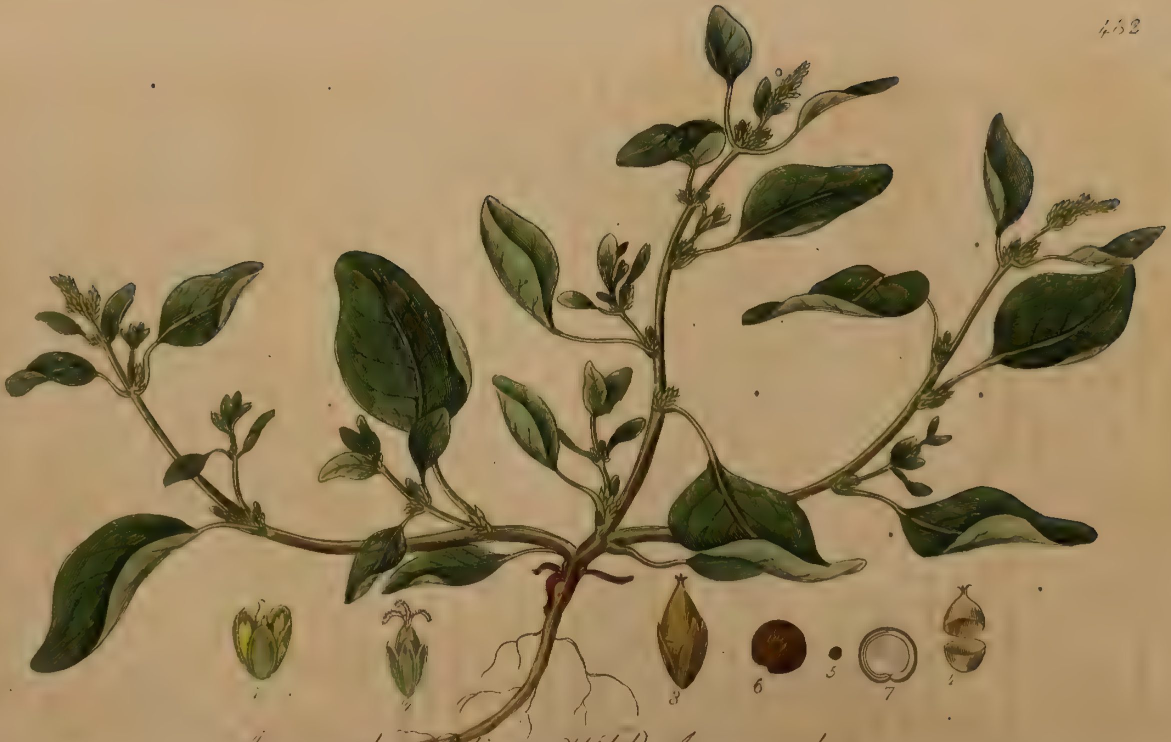

Amaranthus Blitum Wild Amaranth. ⊙

Mathews [illegible]

Pub.d by W. Baxter Botanic Garden Oxford 1842.

AMARA'NTHUS[*].

Linnean Class and Order. Monœ'cia[†], Penta'ndria.

Natural Order. Amarantha'ceæ, R. Brown, Prod. p. 413.—Lindl. Syn. p. 213.; Introd. to Nat. Syst. of Bot. p. 165.—Rich. by Macgilliv. p. 426.—Loud. Hort. Brit. p. 530.—Hook. Brit. Fl. (4th ed.) p. 416.—Amaranthi. Juss. Gen. Pl. p. 87.—Querneales; sect. Rumicinæ; type, Betaceæ; subty. Amarantidæ; Burn. Outl. of Bot. v. ii. pp. 523, 587, 591, & 593.—Miscellaneæ, *Linn.*

Gen. Char. *Flowers* monœcious. *Sterile Flowers* (fig. 1). *Calyx* of 3, or 5, upright, elliptic or spear-shaped, coloured, permanent sepals. *Corolla* none. *Filaments* (see fig. 1.) 3 or 5, hair-like, upright, not longer than the calyx, opposite to its segments. *Anthers* oblong, versatile, of 2 lobes.—*Fertile Flowers* (fig. 2.) in the same cluster with the sterile ones. *Calyx* the same. *Corolla* none. *Germen* (see fig. 2.) superior, egg-shaped. *Styles* (see fig. 2.) 3, sometimes but 2. *Stigmas* undivided, pointed, downy on the upper side. *Capsule* (fig. 3.) egg-shaped, thin, crowned with the remains of the styles, bursting all round (see fig. 4.), of 1 cell. *Seed* (figs. 5 & 6.) solitary, globose, compressed, filling the capsule.

The 3- or 5-sepaled *calyx;* the want of a *corolla;* the *sterile flowers* with 3 or 5 *stamens;* and the *fertile ones* with 3 *styles;* 3 *stigmas;* and a 1-celled, 1-seeded *capsule*, opening by a transverse incision; will distinguish this from other genera in the same class and order.

One species British.

AMARA'NTHUS BLITUM. Blite Amaranth. Wild Blite. Small Garden Blite. Small Red Blite.

Spec. Char. Flowers 3-cleft and triandrous, in small lateral clusters. Leaves egg-shaped, blunt. Stem spreading.

Engl. Bot. t. 2212.—Linn. Sp. Pl. p. 1405.—Huds. Fl. Angl. (2nd ed.) p. 418.—Willd. Sp. Pl. v. iv. pt. 1. p. 387.—Sm. Fl. Brit. v. iii. p. 1018.; Engl. Fl. v. iv. p. 137.—With. (7th ed.) v. ii. p. 208.—Lindl. Syn. p. 213.—Hook. Brit. Fl. p. 404.—Macr. Man. Brit. Bot. p. 193.—Relh. Fl. Cant. (3rd ed.) p. 392.—Winch's Fl. of Northumb. and Durh. p. 61.—Irv. Lond. Fl. p. 284.—*Amaranthus minor*, Gray's Nat. Arr. v. ii. p. 289.—*Blitum rubrum minus*, Ray's Cantab. p. 23.—Dill. in Ray's Syn. p. 157.—Bauh. Hist. v. ii. p. 967, with a figure.—Johnson's Gerarde, p. 321. f. 4—*Small Garden Blite*, Petiv. H. Brit. t. 7. f. 9.—*Blitum minus sylvestre rubrum*, Park. Theatr. p. 753. f. 2.

Localities.—On low waste ground, and near dunghills; very rare.—*Cambridgeshire;* Near Parker's Piece. Barnwell, by the side of the road leading to Hinton: Rev. R. Relhan.—*Dorset;* On rubbish, and about old walls; at

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Fig. 1. A Sterile Flower.—Fig. 2. A Fertile Flower.—Fig. 3. A Capsule, accompanied by the Calyx.—Fig. 4. A Capsule with the valves separated.—Figs. 5 & 6. A Seed.—Fig. 7. The same cut perpendicularly, showing the Radicle and the Cotyledons.—*All, except fig.* 5, *magnified.*

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[*] From *Amarantos*, Gr. *everlasting;* the flowers being little subject to decay.

[†] See folio 83, note †.

Weymouth, about the quay, and elsewhere; at Poole: Dr. PULTENEY.—*Durham;* On Hebburn, Jarrow, and Sunderland Ballast-hills: N. J. WINCH, Esq.—*Huntingdonshire;* At Ripton: Mr. WOODWARD.—*Kent;* Tunbridge Wells; *Fl Tunb.—Middlesex;* About London: *Engl. Fl.* Walham Green: N. J. WINCH, Esq. Gathered once near Stoke Newington by J. WOODS, jun.: B. G.—*Northumberland;* On Willington Ballast-hills: N. J. WINCH, Esq.—*Surrey;* Battersea Fields, towards Vauxhall: Mr. W. PAMPLIN, jun.

Annual.—Flowers in August.

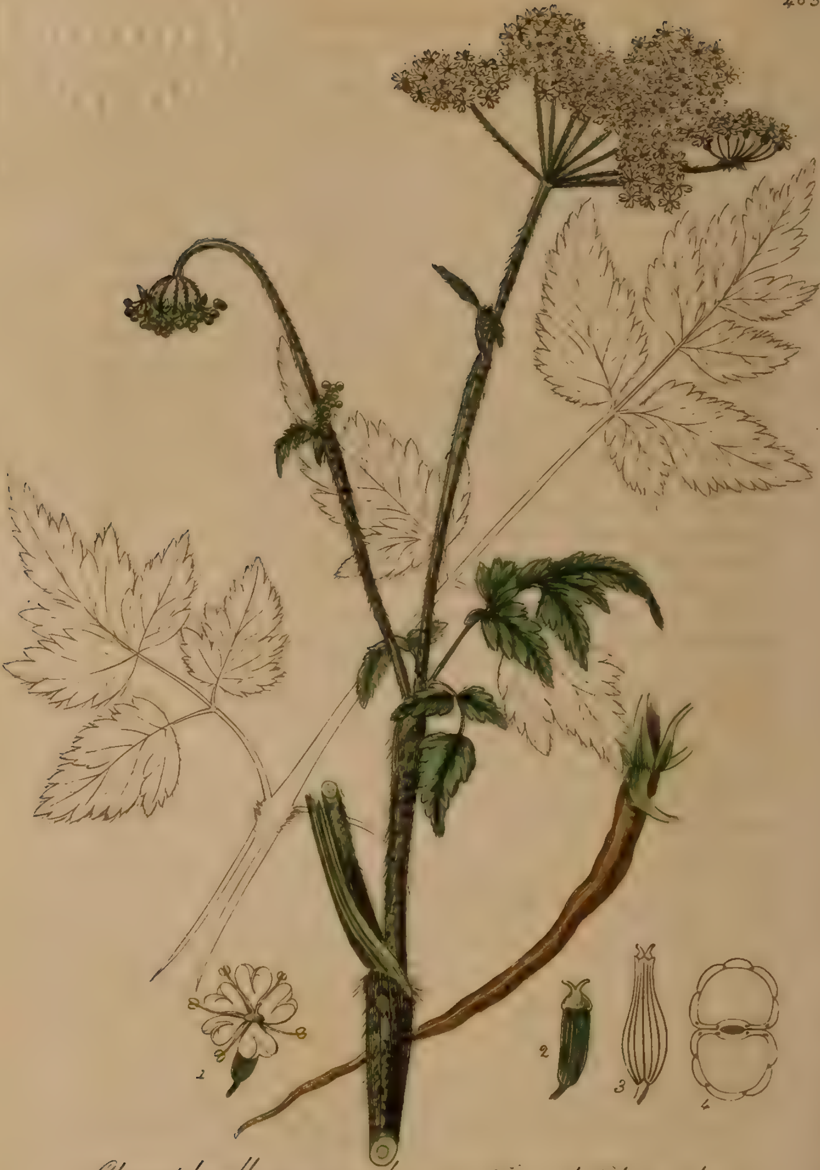
Root tapering, fibrous. *Stems* several, trailing, branched, leafy, widely spreading, round, furrowed, smooth. *Leaves* alternate, on longish petioles, egg-shaped, or somewhat rhomboid, more or less blunt, roughish at the edges only, sometimes white or silvery in the middle, with or without a brown spot. *Flowers* numerous, green, crowded, tufted, in small, axillary, leafy *clusters.* *Calyx* of 3 oblong, bluntish, green, membranous sepals. *Stamens* 3. *Seeds* black and shining.

This plant is a native of all Europe, except the very cold parts, Japan, &c., in cultivated grounds, on dunghills, banks, among rubbish, &c. Mr. LOUDON, in his "Hortus Britannicus," describes 60 species of this genus, many of which are very beautiful, and have been long cultivated as ornaments to the flower garden. Amongst them are, *Love-lies-bleeding (Amaranthus candatus), Prince's Feather (A. hypochondriacus),* & *Tricolors (A. tricolor).*

The *Natural Order* AMARANTHA'CEÆ consists of herbaceous, or somewhat shrubby, apetalous, dicotyledonous *plants,* with opposite or alternate *leaves,* without *stipulæ.* The *flowers* are small, usually coloured, sometimes monœcious, but more usually perfect; and disposed in spikes, or heads. The *calyx* is inferior, of 3 or 5 scarious, permanent sepals, occasionally with two bracteas at the base. The *stamens* are hypogynous (growing from below the base of the germen), either 3 or 5, or some multiple of 5; with either distinct or united *filaments;* and 2-celled, or 1-celled *anthers.* The *ovary (germen)* (see fig. 2.) is single, superior, of 1 or 2 cells, with 1 or few *ovules (young seeds).* The *styles* (see fig. 2.) are either 1, (or 3,) or none; with simple or compound *stigmas.* The *capsule* (see figs. 3 & 4.) is 1-celled. The *seeds* are lens-shaped, often stalked and pendulous; with a crustaceous *testa;* a central, farinaceous *albumen;* and a cylindrical, elongated *embryo,* which is curved round the circumference (see fig. 7).

"It is difficult," says Professor LINDLEY, in his elegant work, the *Ladies' Botany,* "to mention an order much more simply constructed than this, and yet how perfectly are all the parts adapted to the end for which they are created. Even a provision for a beautiful appearance is not neglected, for in order to compensate for their smallness, we find the flowers developed in large masses, and aided by multitudes of shining bracts, which contribute very essentially to their fine appearance."

Their virtues are nutritive, emollient, and demulcent; they are all harmless, and many of the species may be used as pot-herbs.—*Amaranthus* is the only British Genus in the order.



Chærophyllum temulentum. Rough Chervil. ♂

Mathews. Del & Sc

Pub.d by W.m Baxter Botanic Garden Oxford 18[illegible]

CHÆROPHY'LLUM *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. UMBELLI'FERÆ ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, SMYRNIACEÆ; subtype, SCANDICIDÆ; Burn. Outl. of Bot. pp. 614, 770, 780, & 781.

GEN. CHAR. *Flowers* imperfectly separated. *Calyx* an obsolete margin. *Corolla* (see fig. 1.) of 5 inversely egg-shaped, emarginate petals, with an inflexed point. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, as long as the petals. *Anthers* roundish. *Germen* (fig. 2.) inferior, oblong, somewhat club-shaped, blunt, furrowed, smooth, slightly compressed. *Styles* (see fig. 2.) 2, awl-shaped, a little spreading, very tumid at the base. *Stigmas* blunt. *Floral Receptacle* wanting. *Fruit* (see fig. 3.) without a beak, compressed or contracted at the sides. *Carpels* with 5 obtuse equal ribs, of which the two lateral ones form a margin; the commissure (face) with a deep furrow. *Interstices (channels)* with a single *vittæ* in each. *Seed* taper, (round and long,) its transverse section halfmoon-shaped.—*Universal involucrum* wanting, or of few leaves; *partial involucrum* of many leaves.

The obsolete *calyx;* the superior *corolla,* of 5 inversely egg-shaped, emarginate, inflexed petals; the smooth, elongated, narrow, laterally compressed or contracted *fruit,* without a beak; the *carpels* with 5 blunt equal ribs, with a single *vitta* in each *channel;* and the *commissure* with a deep furrow; will distinguish this from other genera in the same class and order.

Three species British.

CHÆROPHY'LLUM TEMULE'NTUM. Intoxicating Cow-parsley. Rough Cicely. Wild Chervil. Small Cow-parsley.

SPEC. CHAR. Stem rough, spotted, swollen below the joints. Leaves bipinnate; leaflets egg-shaped, slightly acuminate Partial involucrum reflexed. Fruit nearly smooth.

Engl. Bot. t. 1521.—Huds. Fl. Angl. (2nd edit.) p. 125.—Sm. Fl. Brit. v. i. p. 326.—With. (5th ed.) v. ii. p. 387.—Gray's Nat. Arr. v. ii. p. 504.—Hook. Brit. Fl. p. 130.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 366.—Sibth. Fl. Oxon. p. 101.—Abbot's Fl. Bedf. p. 66.—Thomps. Pl. of Berw. p. 32.—Davies' Welsh Bot. p. 29.—Purt. Midl. Fl. v. i. p. 155.—Relh. Fl. Cant. (3rd ed.) p. 124.—Hook. Fl. Scot. p. 93.—Grev. Fl. Edin. p. 68.—Fl. Devon. pp. 53 & 167.—Bab. Fl. Bath. p. 21.—Dick. Fl. Abred. p. 31.—Irv. Lond. Fl. p. 197.—Luxf. Reig. Fl. p. 27.—Baines' Fl. of Yorksh. p. 48.—Leight. Fl. of Shropsh. p. 133.—Gulliv. Pl. of Banb. p. 6.—Mack. Catal. of Pl. of Irel. p. 29.; Fl. Hibern. p. 125.—*Chærophyllum*

Fig. 1. A separate Flower.—Fig. 2. Germen and Styles.—Fig. 3. A Fruit.—Fig. 4. Transverse section of a Fruit.—*All magnified.*

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* From *chairo,* Gr. *to rejoice;* and *phyllon,* Gr. *a leaf;* in allusion to the agreeable odour of the leaves of several of the species.

† See folio 48, note †.

‡ See folio 235, *a.*

témulum, Linn. Sp. Pl. p. 370.—Curt. Fl. Lond. t. .—Jacq. Fl. Austr. t 65.—Willd. Sp. Pl. vol. v. pt. II. p. 1454.—Decand. Prod. v. iv. p. 226.—Lindl. Syn. p. 125.—Macr. Man. Brit. Bot. p. 106.—Lightf. Fl. Scot. v. i. p. 167.—Bab. Prim. Fl. Sarn. p. 46.—Beesl. Hist. Banb. p. 581.—*My'rrhis témula*, Gært. Fruct. et Sem. Pl, v. i. p. 109. t. 23.—*My'rrhis temulénta*, Sm. Engl. Fl. v. ii. p. 51.—With. (7th ed.) v. ii. p. 389.—Johns. Fl. Berw. v. i. p. 68.—Winch's Fl. of Northumb. and Durh. p. 18.—Walker's Fl. of Oxf. p. 77.—Cow. Fl. Guide, p. 38.—*Myrrhis annua vulgaris, caule fusco*, Moris. v. iii. p. 302. sect. 9. t. 10. f. 7.—*Scándix témula*, Roth. Fl. Germ. v. i. p. 22.—*Scandix nutans*, Mœnch. Meth. p. 101.—*Cerefolium sylvestre*, Ray's Syn. p. 207.—Johns. Ger. p. 1038, with a figure.—*Anthriscus Plinii*, Delech. Hist. p. 791, with a figure.—*Wild Chervil*, Petiv. Herb. Brit. t. 25. f. 3.

LOCALITIES.—In hedges, and bushy places; common.

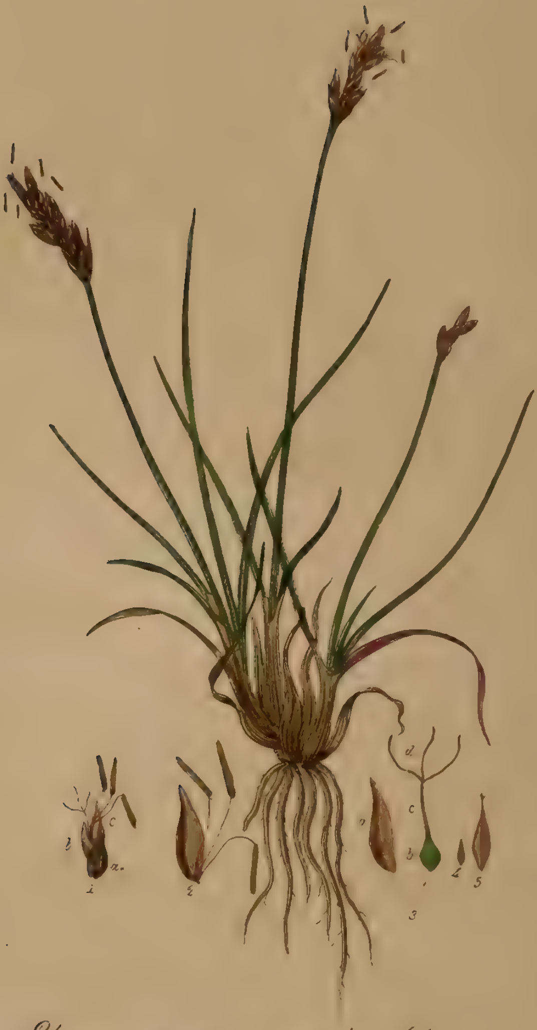
Biennial.—Flowers in June and July.

Root spindle-shaped, somewhat branched, whitish. *Stem* from 2 to 3 feet high, upright, branched, round, solid, striated, rough with deflexed hairs, and spotted with dark purple; swollen under each joint. *Leaves* alternate, dark green above, paler beneath, hairy, twice pinnate; leaflets somewhat egg-shaped, lobed, and cut. *Petioles* dilated and clasping at the base. *Umbels* of many hairy unequal rays; the *partial* ones smooth, drooping when young. *Universal involucrum* either entirely wanting or of one leaf; rarely of many. *Partial Involucrum* of several egg-shaped, pointed, somewhat membranous or coloured leaves, finely fringed on their margins and keel, and occasionally confluent at the base. *Flowers* white, numerous, very slightly irregular, partly sterile; those of the circumference principally fertile. *Petals* (see fig. 1.) heart-shaped from the inflexion of their points. *Germen* (see fig. 2.) club-shaped, smooth. *Styles* decurved, shorter than their globose base. *Stigmas* blunt. *Fruit* (fig. 3.) somewhat strap-shaped, striated, and nearly smooth.

The whole plant is sweetish and aromatic, and is acceptable to domestic cattle, nor is any intoxicating quality recorded, notwithstanding the specific name. The herbage is often mildewed. (See SM. *Engl. Fl.*). The roughness, dark purple spots, and swollen joints of the stem, will distinguish it from most other of the British *Umbelliferæ*.

"RANGE thro' the fields in Spring's enchanting hours,
And mark the beauties that are spread around!
Lo, how the Summer doth bedeck the ground
With choicest store of blooming fruits and flow'rs!
See how the yellow Autumn amply show'rs
Her gifts, that with glad plenteousness abound!
In gloomy Winter too, use may be found,
For then the earth doth renovate her pow'rs!
Ponder on all these things!—Do they not raise,
With one accord, an universal song
To their great Author, of mute thanks and praise?
Do they not speak, in accents wond'rous strong,
The pow'r and greatness of His mighty ways?
The speechless thanks that to His name belong?"

Literary Gazette, Oct. 29, 1825. [R.]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Elyna caricina Carex-like Elyna ♃

Mathews Del & Sc.

Pub^d by W^m Baxter, Botanic Garden, Oxford 1839

ELY'NA [*].

Linnean Class and Order. Monœ'cia [†], Tria'ndria [‡].

Natural Order. Cypera'ceæ [§], *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—Cyperoideæ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—Cyperales; sect. Caricinæ; type, Caricaceæ; Burn. Outl. of Bot. v. i. pp. 354 & 358.—Calamariæ, *Linn.*

Gen. Char. *Spikes* terminal, compound, monœcious. *Spikelets* (fig. 1.) 2-flowered, upper one (fig. 1, c.) *sterile*, lower one (fig. 1, *b.*) *fertile*, both included in a broad sheathing *bractea* (fig. 1, *a*). *Sterile Flower* (fig. 2). *Calyx* a single, oblong, involute, permanent scale, sometimes wanting. *Corolla* none. *Filaments* (see fig. 2.) 3, hair-like, upright, longer than the *calyx* or *scale*. *Anthers* vertical, strap-shaped, upright, of 2 cells. *Fertile Flower* (fig. 3). *Calyx* as in the sterile flower. *Corolla* none. *Germen* (fig. 3, *b.*) superior, triangular. *Style* (fig. 3, *c.*) 1, cylindrical. *Stigmas* (fig. 3, *d.*) 3, tapering, spreading, downy. *Seed* or *Nut* (figs. 4 & 5.) 1, somewhat triangular, pointed, hard, naked, except the permanent scale (fig. 3, *a.*) which shelters it.

The 2-flowered *spikelets*, with their upper flower *sterile*, and their lower one *fertile*, each with a *calyx* of one involute scale (see fig. 1, *b* and *c.*), without a *corolla;* and both included in a broad sheathing *bractea* (fig. 1, *a.*); and the single, somewhat 3-cornered, naked *seed* or *nut;* will distinguish this from other genera in the same class and order.

It differs from *Carex* (t. 440.) in the seed being naked; and in the absence of a *corolla* in the fertile flowers.

One species British.

ELY'NA CARICI'NA. Carex-like Elyna. Compound-headed Elyna.

Spec. Char. Spikelets aggregate, compound.

Mert. and Koch. Fl. Germ. v. i. p. 459.—Hook. Brit. Fl. p. 401.—Winch's Fl. of Northumb. and Durh. p. 61.—Irv. Lond. Fl. p. 284.—Baines' Fl. of Yorkshire, p. 112.—*Kobrésia caricina*, Willd. Sp. Pl. v. iv. pt. i. p. 206.—Sm. Engl. Fl. v. iv. p. 129.—With. (7th ed.) v. ii. p. 139.—Lindl. Syn. p. 284.—Macr. Man. Brit. Bot. p. 249.—Fl. Devon. pp. 153 & 119.—*Cobresia caricina*, Pers. Syn. Pl. v. ii. p. 534.—Gray's Nat. Arr. v. ii. p. 69.—*Carex hybrida*, Schkuhr. Car. t. R. r. r. f. 161. According to Willdenow.—*Carex mirabilis*, Host.—*Schænus monoicus*, Engl. Bot. t. 1410.

Localities.—On mountains, in moist muddy spots; very rare.—*Devonshire;* Broad Clyst. Haldon, plentiful: Mr. Jacob.—*Durham;* On the Widdy Bank in Teesdale Forest; also on Cronkley Fell: Aug. 25, 1799; Mr. Dickson, and N. J. Winch, Esq.; to whom it was pointed out by the Rev. J. Harriman.

Fig. 1. A Spikelet; *a*, a bractea; *b*, fertile floret; *c*, sterile one.—Fig. 2. A separate Sterile Floret.—Fig. 3. A separate Fertile Floret; *a*, the calyx or scale; *b*, germen; *c*, style; *d*, stigma.—Figs. 4 & 5. Seed.—*All, except fig.* 1, *magnified.*

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[*] From *elyo*, Gr. *to cover;* which the scale does the flower.

[†] See fol. 83, note †.

[‡] See fol. 56, note †.

[§] See fol. 436, *a.*

Teesdale: June, 1842; W. Borrer, Esq.—*Westmoreland;* In Birkdale: Rev. J. Harriman, in B. G.—*Yorkshire;* On Cronkley Fell, at 2000 feet elevation: R. B. Bowman, in N. B. G.—SCOTLAND. *Perthshire;* Near the summit of Schroine ach Lochen; a mountain south of Mael Ghyrdy: August, 1827; W. Wilson, Esq., in *Hooker's Botanical Miscellany*, v. i. p. 84. "I gathered it somewhere on the Breadalbane Mountains, and incline to suppose it was on Ben More:" Mr. H. C. Watson, in N. B. G.

Perennial.—Flowers in August.

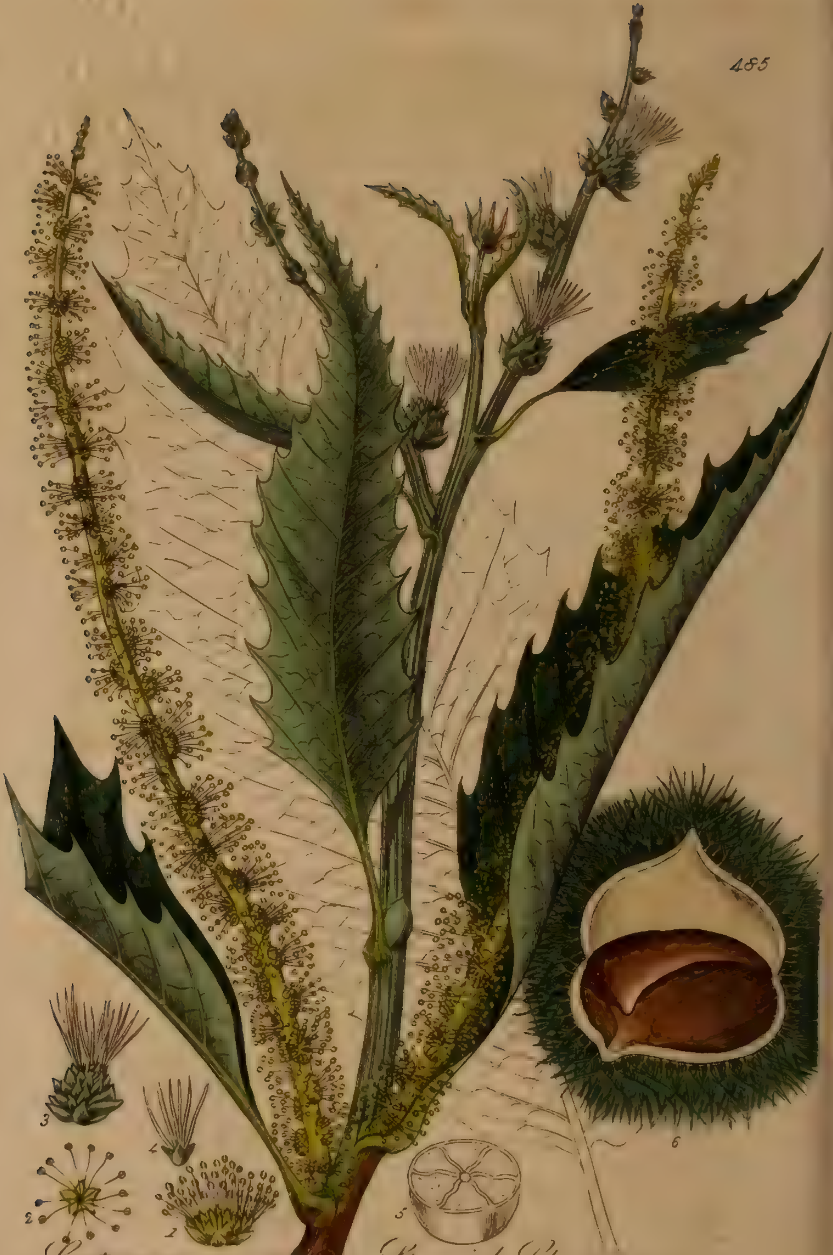
Root fibrous, tufted. *Culms (stems)* solitary, simple, naked, from 2 to 6 inches high, striated, smooth, roundish towards the base, angular, and rough-edged, at the top. *Leaves* several, radical, spreading or recurved, very slender, strap-shaped, channelled on the upper surface, slightly keeled on the under, pointed, striated, smooth, rough-edged, shorter than the culm; their longish *sheaths* closely embracing its base, each crowned with a short, brownish, membranous *stipula.* *Spike* terminal, compound, somewhat egg-shaped, upright, not an inch long, having a short, sheathing, brown, membranous *bractea*, or two, at its base. *Spikelets* alternate, small, brown, usually 2-flowered. *Germen* oblong, scarcely 3-cornered. *Style* simple. *Stigmas* 3, strap-shaped, downy. *Seed* without any other covering than the scale (see fig. 3, *a.*), oblong, somewhat triangular, horny, smooth, crowned with the base of the style.

This singular little plant is, in habit, nearly allied to *Scirpus*, and still more closely to *Blyssmus*, t. 308; but the flowers are monœcious. From *Carex* it differs in not having the inflated corolla. It is a native of Switzerland as well as of Britain. Sir J. E. Smith found it on Mount Cenis in August, 1787, but kept it unsettled in his Herbarium till 1799, in which year it was gathered in the county of Durham by Mr. Dickson, to whom, Sir James informs us, is due the honour of making it known. The Rev. Mr. Harriman had found it in 1797; but not being aware of its novelty, he liberally disclaimed the merit of the discovery. See *Engl. Bot.* fol. 1410.

The drawing for the accompanying plate was made from a specimen kindly communicated to me by W. Borrer, Esq., who gathered it in Teesdale in June last.

"Every tree,
And bush, and fragrant flower, and hilly path,
And thymy mound that flings unto the winds
Its morning incence, is—my friend; for I
Did make acquaintance with inanimate things
In very boyhood, and did love to break
With shouts the mountain silence, and to hang
O'er flashing torrents, when the piny boughs
Shook their dark locks, and plained in mournful tones
Mysterious to the barren wilderness;
And still, in solitary spots, my soul
Resumes its youth . . . . Think not that this is all
An idle folly; He who can draw a joy
From rocks, or woods, or weeds, or things that seem
All mute (and does't)——is wise."

Literary Gazette, Oct. 24, 1818. [W.]



Castanea vesca. Spanish Chestnut. ♄

Mathews Del. & Sc

Pub^d by W. Baxter, Botanic Garden, Oxford 1840.

CASTA′NEA[*].

Linnean Class and Order. MONŒ′CIA[†], POLYA′NDRIA.

Natural Order. CUPULI′FERÆ, *Richard.*—Lindl. Syn. p. 239; Introd. to Nat. Syst. of Bot. p. 97.—Rich. by Macgilliv. p. 545.—CORYLA′CEÆ, Loud. Encyclop. of Trees and Shrubs, p. 845.—AMENTA′CEÆ, *Linn.*—Juss. Gen. Pl. p. 407.—Sm. Gram. of Bot. p. 189.—Loud. Hort. Brit. p. 534.—Mack. Fl. Hibern. p. 242.—Hook. Brit. Fl. (4th ed.) p. 419.—QUERNEALES; sect. QUERCINÆ; type, CORYLACEÆ; Burn. Outl. of Bot. v. ii. pp. 523 & 531.

GEN. CHAR. *Sterile Flowers* numerous, on a very long cylindrical *catkin*, in irregular clusters. (see fig. 1). *Calyx* (see fig. 2.) of 1 sepal, in 5 or 6 segments. *Corolla* none. *Filaments* (see fig. 2.) from 5 to 20, or more, hair-like, longer than the calyx. *Anthers* roundish, or oblong, of 2 lobes.—*Fertile Flowers* (see fig. 3.) 3 together, within a 4-lobed, thickly muricated *involucrum*. *Calyx* (fig. 4.) of 1 sepal, in 5 or 6 segments, having the rudiments of 12 stamens. *Germen* incorporated with the calyx, 6-celled (see fig. 5.), each cell 2-seeded, 5 of the cells mostly abortive. *Styles* (see fig. 4.) 6. *Stigmas* oblong, permanent. *Nut* 1-celled, with from 1 to 3 *seeds*, inclosed in the enlarged spiny *involucrum* (fig. 6).

The *sterile flowers* clustered, on a very long cylindrical catkin, each flower with from 5 to 20 stamens; and the *fertile flowers* inclosed, 3 together, in a 4-lobed, spiny involucrum, each with 6 *styles*; will distinguish this from other genera in the same class and order.

One species British.

CASTA′NEA VESCA. Eatable Chestnut. Sweet Chestnut. Spanish Chestnut, or Chesnut.

SPEC. CHAR. Leaves oblong-spear-shaped, pointed, sharply serrated; smooth on each side.

Gærtn. v. i. p. 181. t. 37, f. 1.—Willd. Sp. Pl. v. iv. pt. I. p. 460.—Gray's Nat. Arr. v. ii. p. 248.—With. (7th ed.) v. ii. p. 580.—Lindl. Syn. p. 239.—Loud. Arb. et Frutic. Brit. v. iii. p. 1983. figs. 1923 to 1926; and v. viii. t. 286.; Encycl. of Trees & Shrubs, p. 912. f. 1706.; Encycl. of Gard. (new ed.) p. 943. par. 5166.—Irv. Lond. Fl. p. 114.—Cow. Fl. Guide, p. 31.—Beesl. Hist. Banb. p. 588.—*Castanea vulgaris*, Park. Theat. Bot. p. 1400. f. 1.—Lam. Dict. v. i. p. 708.—Lam. et Decand, Fl. Fr. v. iii. p. 306.—Hook. Brit. Fl. p. 408.—Macr. Man. Brit. Bot. p. 216.—Hook. Fl. Scot. p. 273.—Grev. Fl. Edin. p. 203.—Fl. Devon. pp. 155 & 133.—Bab. Prim. Fl. Sarn. p. 91.—Luxf. Reig. Fl. p. 82.—Leight. Fl. of Shropsh. p. 476.—Mack, Cat. Pl. of Irel. p. 83.; Fl. Hibern. p. 255.—*Castanea sativa*, Mill. Ic. p. 56. t. 84.—Hunter in Evelyn's Silva, p. 159, with a plate.—*Castanea*, Ray's Syn. p. 440.—Bauh. Hist. v. i. pt. II. p. 121, with a figure.—Evelyn's Silva, (2nd ed.) p. 41.—Duham. Arb. v. i. t. 50.—Johnson's Gerarde, p. 1442. f. 1.—*Fagus Castanea*, Linn. Sp. Pl. p. 1416.—Engl. Bot. t. 886.—Huds. Fl. Angl. (2nd ed.) p. 422.—With. (2nd ed.) v. ii. p. 1086.—Sm. Fl. Brit. v. iii. p. 1027.; Engl. Fl. v. iv. p. 151.—Abb. Fl. Bedf. p. 211.—Davies' Welsh Bot. p 91.—Purt. Midl. Fl. v. ii. p. 462.—Perry's Pl. Varvic. Selectæ, p. 78.—Winch's Fl. of Northumb. and Durh. p. 62.—Walker's Fl. of Oxf. p. 283.—Baines' Fl. of Yorksh. p. 93.—Gulliv. Pl. of Banb. p. 20.—*Chesnut*, Phill. Pom. Brit. (2nd ed.) p. 93.; Comp. for the Orch. p. 84.—*Chestnut Tree*. Kent's Sylv. Sketches, p. 92.

Fig. 1. A tuft of Sterile Flowers.—Fig. 2. A separate one of ditto.—Fig. 3. A tuft of Fertile Flowers.—Fig. 4. A separate one of ditto.—Fig. 5. Enlarged Germen.—Fig. 6. Matured Involucrum and Nut.

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[*] From *Castanea*, a town in Thessaly; or from another town of that name in Pontus.

[†] See fol. 83, note †.

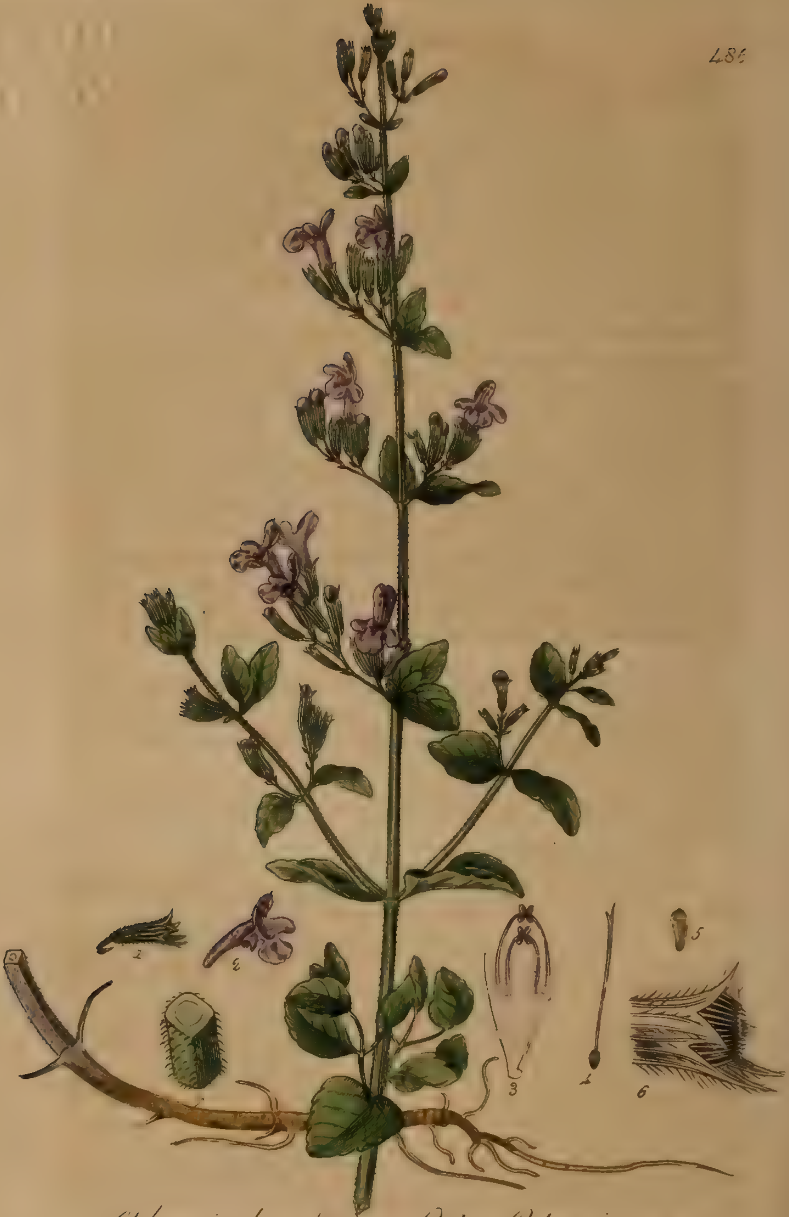
LOCALITIES.—In woods, plantations, and hedges, mostly in the South and West of England; a doubtful native.

Tree.—Flowers in May.

A stately and majestic *tree;* attaining, in favourable situations, the height of 60 or 80 feet. *Bark* with remarkably deep clefts. *Branches* widely spreading, round and smooth when young. *Leaves* alternate, on short petioles, elliptic-spear-shaped, sharp pointed, 5 or 6 inches long, and 2 broad, smooth, with many transverse veins, ending in sharp, somewhat spinous-pointed, serratures; of a rich shining green above, paler beneath. *Sterile Catkins* numerous, axillary, solitary, yellow, pendulous; from 4 to 6 or 7 inches long, deciduous. *Flowers* ranged along the common stalk of the catkin, in lateral sessile tufts (see fig. 1). *Stamens* numerous, long, and spreading.—*Fertile Flowers* (see figs. 3 & 4.) much fewer than the sterile ones, and placed on terminal stalks, which are lengthened out as the fruit advances. *Styles* (see fig. 4.) about 6, with long, smooth, upright *stigmas.* GÆRTNER detected about 12 scarlet rudiments of *stamens*, among the wool at the base of the styles. *Nuts* (see fig. 6.) large, broadly egg-shaped, usually 2; flat on the inner side, and each attached by a broad scar to the bottom of the greatly enlarged involucrum (see fig. 6.) the outside of which is copiously armed with complicated sharp prickles. See Sm. Engl. Fl.

The sweet Chestnut is by some considered to be indigenous in Britain; but, notwithstanding the great age of some specimens, it appears, from the observations of the Hon. DAINS BARRINGTON, and others, more than probable that they have all been planted. Mr. LOUDON observes, that the wood of this tree has the remarkable property of being more durable when it is young than when it is old; the sap or outer wood very soon changing into heart wood; and hence the great value of this tree for posts, fencing-poles, stakes, trellis-work, hoops, &c. (*Encycl. of Tr. & Sh.*) It was once very generally supposed, that the roofs of some of our Cathedrals, and many of the oldest buildings in London were constructed of Chestnut, but it has been shown by DAUBENTON and others, that these roofs and buildings are formed of the wood of the sessile-fruited Oak, (*Quercus sessiliflora,*) which, when old, resembles the Chestnut. (*Cowell's Fl. Guide*). The nuts constitute a great part of the food of the common people in the South of France and the North of Italy; where they are used either roasted or boiled, and also ground into meal, and made into cakes, bread, and puddings. In England they are roasted, and served up as a dessert; they are said also formerly to have accompanied the wassail bowl in the celebration of Christmas festivals. These nuts are also used for whitening linen cloth, and for making starch. Deer are fond of Chestnuts; hence they are sometimes called *Buckmast.* Some instances are recorded in which the Chestnut is said to have arrived at a most extraordinary size and age, such as the *Castagno de cento cavalli,* on Mount Etna, the trunk of which, according to the account given of it by Mr. HOUEL, is 160 feet in circumference. A figure of this tree may be seen in BURNETT's *Outlines of Botany,* v. i. p. 57. The oldest Chestnut tree in England is, I believe, in the garden of Lord DUCIE, at Tortworth, in Gloucestershire; the circumference of its trunk, in 1820, was 52 feet; and it is supposed to be more than 1000 years old. A portrait of this ancient tree, and also of a very old one at Cobham, Kent, is given in Mr. LOUDON's excellent work, the *Arboretum et Fruticetum Britannicum,* at pages 1988 & 1989.

The CUPULIFERÆ are apetalous, dicotyledonous *Trees* or *Shrubs,* with alternate, stipulate, simple, penninerve leaves; and monœcious flowers. *Sterile flowers* amentaceous; *fertile ones* aggregate or amentaceous. *Ovaries* seated within a coriaceous involucrum *(capsule)* of various figure, and with several cells (see fig. 5.) and several *ovules,* the greater part of which are abortive. *Ovules* pendulous, either solitary or two together. *Fruit* a bony or coriaceous, 1-celled *nut,* more or less inclosed in the involucrum.—The British genera are, *Fagus,* t. 331.—*Castanea,* t. 485.—*Quercus,* t. 371.—*Corylus,* t. 338.—*Carpinus,* t. 234.



Calamintha Nepeta. Leſser Calamint. ♃

[illegible] del. & Sc.

Pub.d by W. Baxter. Botanic Garden Oxford [illegible]

CALAMI'NTHA [*].

Linnean Class and Order. Didyna'mia [†], Gymnospe'rmia [‡].

Natural Order. Labia'tæ [§], Juss. Gen. Pl. p. 110.—Sm. Gram. of Bot. p. 99.; Engl. Fl. v. iii. p. 63.—Bentham, in Bot. Regist. (1829.)—Lindl. Syn. p. 196.; Introd. to Nat. Syst. of Bot. p. 239.—Rich. by Macgilliv. p. 439.—Loud. Hort. Brit. p. 528.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 665.—Mack. Fl. Hibern. p. 209.—Hook. Brit. Fl. (4th edit.) p. 415.—Verticillatæ of *Linnæus*.—Syringales; suborder, Primulosæ; sect. Menthinæ; type, Menthaceæ or Labiatæ; subtype, Saturidæ; Burn. Outl. of Bot. v. ii. p. 900, 958, 968, & 972.

Gen. Char. *Flowers* axillary, somewhat solitary, or often in loose bracteated cymes. *Calyx* (fig. 1.) inferior, of 1 sepal, tubular, 13-ribbed, nearly equal at the base, 2-lipped; upper lip of 3 sharp teeth; lower lip of 2 longer, equal, narrow, awl-shaped teeth; the throat hairy inside (see fig. 6). *Corolla* (fig. 2.) of 1 petal, ringent; tube as long as the calyx, or longer; throat but little dilated; upper lip shortest, nearly flat, upright, blunt, with a small notch; lower lip longer and broader, spreading, in 3 deep, blunt lobes, the middle one broadest, with a shallow notch. *Filaments* (see fig. 3.) 4, didynamous, shorter than the corolla, slender, incurved. *Anthers* distinctly 2-lobed. *Germen* (see fig. 4.) 4-cleft. *Style* thread-shaped. *Stigma* in 2 acute segments. *Seeds* (see fig. 5.) 4, small, roundish, in the bottom of the closed, permanent calyx.

The *flowers* in loose bracteated cymes; the tubular, 13-ribbed, 2-lipped *calyx*, nearly equal at the base, with 5 unequal teeth, and a hairy throat; the *corolla* with the upper lip nearly flat, and the lower one 3-lobed, with the middle lobe emarginate; and the incurved *stamens*; will distinguish this from other genera in the same class and order.

It differs from *Thymus* (t. 127.) in the stamens being ascending and incurved, not distant; and from *Acinos* (t. 479.) in the base of the calyx being nearly equal, not gibbous.

Two species British.

CALAMI'NTHA NE'PETA. Cat-mint Balm. Lesser Calamint. Three-forked Calamint. Field Calamint.

Spec. Char. Whorls on forked, many-flowered stalks, longer than the adjoining leaf. Leaves serrated. Hairs in the mouth of the calyx prominent.

Pursh's Fl. Amer. Sept. v. ii. p. 413.—Hook. Brit. Fl. p. 280.—Irv. Lond. Fl. p. 134.—Luxf. Reig. Fl. p. 53.—*Calamintha trichotoma*. Gray's Nat. Arr. v. ii. p. 384.—*Calamintha odore pulegii*, Ray's Syn. p. 243.—Johnson's Gerarde, p 687. f. 4.—Blackst. Sp. Bot. p. 9.—*Calamintha altera odora Pulegii foliis maculosis*, Park. Theatr. Bot. p. 36.—*Melissa Nepeta*, Linn. Sp. Pl. p. 828.—Curt. Fl. Lond. t. —Huds. Fl. Angl. (2nd ed.) p. 263.—Willd. Sp. Pl. v. iii. pt, 1.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. Stamens.—Fig. 4. Pistil.—Fig. 5. Seed.—Fig. 6. Mouth of the Calyx, showing the projecting hairs.—Fig. 7. A Portion of the stem.—*All, more or less, magnified.*

[*] From *kalos*, Gr. *good*; and *mentha*, Gr. *mint*; a plant whose scent drove away serpents.—Hooker.

[†] See fol. 31, note †. [‡] See fol. 31, note ‡. [§] See fol. 94, *a*.

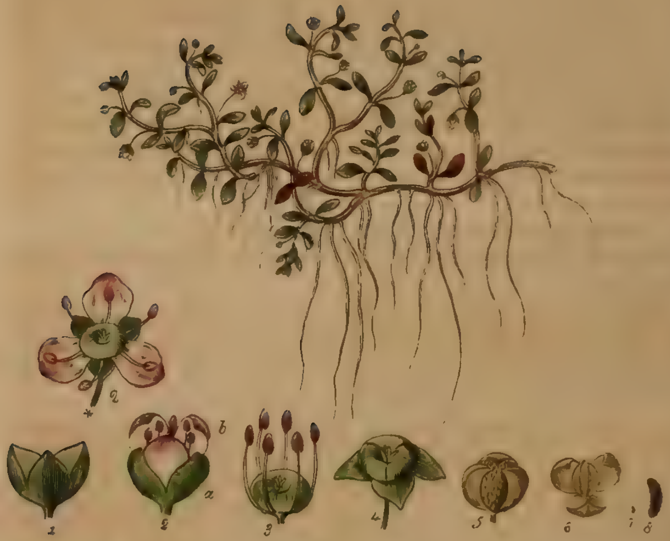
p. 147.—Lindl. Syn (2nd ed.) p. 202.—Don's Gen. Syst. of Gard. and Bot. v. v. p. 781.—Macr. Man. Brit. Bot. p. 182.—Sibth. Fl. Oxon. p. 190.—Bab. Prim. Fl. Sarn. p. 72.—*Thymus Nepeta*, Engl. Bot. t. 1414.—Sm. Fl. Brit. v. ii. p. 642.—Engl. Fl. v. iii. p. 110.—With. (7th ed.) v. iii. p. 722.—Lindl. Syn. p. 205.—Relh. Fl. Cant. (3rd ed.) p. 274—Winch's Fl. of Northumb. & Durh. p. 40.—Walker's Fl. of Oxf. p. 172.—Cow. Fl. Guide, p. 50.—Baines' Fl. of Yorksh. p. 84.

Localities.—In dry situations, on banks and way-sides, on a chalky soil; not uncommon in England.—*Oxfordsh.* Ensham, on the road to Stanton Harcourt: Dr. Sibthorp.—*Berks;* Road-side near Wickham: Mr. Gotobed. Bank on the side of the Abingdon road, going through Bagley Wood: 1831; W. B.—*Bucks;* Road-side near Bulstrode: Mr. Gotobed. Between St. Peter's and St. Giles, Chalfont, abundantly: Blackstone.—*Cambridgeshire;* Granchester; Hildersham; Linton, &c.: Rev. R. Relhan.—*Cornwall;* Near St. Austel: *Tour.*—*Derbysh.* South Normanton: Pilkington.—*Dorset;* Not uncommon; lane near Old Warren; and elsewhere about Blandford: Dr. Pulteney.—*Durham;* On the bank next the river by Durham Abbey; *Wilson's Syn.*, p. 97. It still grows there: N. J. Winch, Esq. On old Ballast Hills at Friar's Goose, below Gateshead: N. B. G.—*Essex;* Way-sides about Henham; Stanstead; Mount Fitchet; Chelmsford; Billericay; and elsewhere in many parts of the county: Mr. E. Forster, jun.—*Gloucestersh.* Near Bristol: Miss Worsley, in N. B. G.—*Kent;* about Charlton, Dartford, and many other places in the county: Blackstone. In old sand-pits at the back of Charlton Church: Curtis. Tunbridge Wells. *Fl. Ton.* S. Kent: Rev. G. E. Smith.—*Leicestersh.* In dry lanes near Prestwold; about Leicester; at Swithland: Dr. Pulteney.—*Norfolk;* Common in Norfolk: Mr. Woodward. On the Castle Hill at Castle Acre: Mr. E. Forster, jun.—*Notts;* In fields about Coddington: N. B. G.—*Suffolk;* Hedge on the right, just below Kennet Bell: Sir T. G. Cullum.—*Surrey;* Sparingly on banks near Red-hill. Plentiful by road-sides between Dorking and Leatherhead: *Reig. Fl.*—*Sussex;* About Hastings Castle: W. Borrer, Esq. Near Tunbridge Wells: Forster.—*Wilts;* On the wall opposite Lacock Abbey: N. B. G.—In *Worcestershire:* E. Lees.—*Yorksh.* Neighbourhood of Malton: Teesdale. At Cookridge: Rev. W. Wood.—WALES. *Denbighsh.* Denbigh Castle; and Graig near Denbigh: Mr. Griffith.

Perennial.—Flowers in July and August.

Root branched, woody, round, and fibrous. *Stems* many, ascending, from 1 to 2 feet long, much branched, obscurely 4-cornered, brown towards the base, clothed with soft, spreading, somewhat recurved hairs (see fig. 7). *Leaves* opposite, on very short petioles, spreading, broadly egg-shaped, blunt, serrated, the margin slightly recurved, somewhat downy on both surfaces, paler underneath, with prominent hairy nerves, and resinous dots. *Flower-stalks* axillary, solitary or in pairs, opposite, forked, much longer than the adjoining leaves, from 3- to more than 20-flowered, forming a spurious kind of half whorl, with awl-shaped *bracteas* at the base of the partial flower-stalks. *Calyx* somewhat bell-shaped, not swelling in front, slightly 2-lipped, the outside clothed with long hairs, and minute, shining, resinous glands; the inside smooth, except the throat, which is closed with long, white, projecting, bristly hairs, which are very conspicuous, especially after the flowers have fallen; two lower teeth rather longer and narrower than the three upper (see fig. 6). *Corolla* pale purplish-blue, about twice as long as the calyx, downy; the middle lobe of the lower lip with a broad shallow notch; throat with white club-shaped bristles. *Seeds* pale brown, minutely dotted.

The whole herb has a strong aromatic smell, resembling that of Pennyroyal, and is said to make an agreeable tea, of somewhat tonic effect. It is distinguished from *Calamintha officinalis* by the prominent hairs of the calyx.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Elatine hexandra. Six-stamened Water-wort. ☉

Mathews Del. & Sc.   Pub.d by W. Baxter Botanic Garden Oxford 1842

ELA'TINE[*].

Linnean Class and Order. OCTA'NDRIA[†], TETRAGY'NIA.

Natural Order. CARYOPHY'LLEÆ[‡], *Linn.*—Juss. Gen. Pl. p. 299.—Sm. Gram. of Bot. p. 159.—Lindl. Syn. p. 43.; Introd. to Nat. Syst. of Bot. p. 156.—Rich. by Macgilliv. p. 507.—Loud. Hort. Brit. p. 501.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 379.—Mack. Fl. Hib. p. 40.—Hook. Brit. Fl. (4th ed.) p. 400.—ROSALES; subord. RHŒADOSÆ; sect. DIANTHINÆ; type. ELATINACEÆ; Burn. Outl. of Bot. pp. 614, 784, 805, & 806.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 3 or 4, roundish, slightly concave, rather unequal, spreading segments, permanent. *Corolla* (see fig. 2.) of 3 or 4, egg-shaped, blunt, sessile, spreading petals, alternate with the segments of the calyx. *Filaments* (see figs. 2 and 3.) 6 or 8, awl-shaped, about as long as the petals. *Anthers* roundish. *Germen* (see figs. 3 & 4,) superior, large, globular, rather depressed. *Styles* (see figs. 2 to 4.) 3 or 4, upright, very short. *Stigmas* simple. *Capsule* (fig. 5.) globose, depressed, large, of 3 or 4 valves, and 3 or 4 cells. *Partitions (dissepiments)* alternate with the valves (see fig. 6), attached only to the *central column (placenta)*. *Seeds* (figs. 7 & 8.) numerous, upright, oblong, curved, furrowed and transversely striated, attached to the central, free *placenta.*

The 3- or 4-parted *calyx;* the *corolla* of 3 or 4 petals, with from 6 to 8 stamens, and 3 or 4 *styles;* the 3- or 4-valved, 3- or 4-celled, many-seeded *capsule;* and the cylindrical, furrowed, transversely striated *seed;* will distinguish this from other genera in the same class and order.

Two species British.

ELA'TINE HEXA'NDRA. Six-stamened Water-wort. Small Water-wort.

SPEC. CHAR. Leaves opposite, in pairs; spathulate. Flowers alternate, stalked, upright, with 6 stamens, and 3 petals. Capsule turbinate, concave at the summit, 3-celled. Seeds about 12 in each cell, nearly straight, ascending.

De Cand. Icon. Pl. Rar. v. i. p. 14. t. 43. f. 1.; Prod. v. i. p. 390.—Reichenb. Iconogr. Bot. t. 413.—Hook. Brit. Fl. p. 185.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 420.—J. E. BOWMAN, in Engl. Bot., at t. 2670.—Macr. Man. Brit. Bot. p. 31 —Irv. Lond. Fl. p. 244.—Leight. Fl. of Shropsh. p. 173.—Mack. Fl. Hibern. p. 45.—*Elatine Hydropiper*, Engl. Bot. t. 955. (not of *Linn.* or of *Engl. Bot.* t. 2670.)—Sm. Fl. Brit. v. iii. p. 1396.—With. (7th ed.) v. ii. p. 502.—Mack. Cat. Pl. of Irel. p. 38.—*Elatine tripetala*, Sm. Engl. Fl. v. ii. p. 243.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 420.—*Alsinastrum serpillifolium, flore roseo, tripetalo*, Vaill. Bot. Par. p. 5. t. 9. f 1.—*Willisellus serpyllifolia*, Gray's Nat. Arr. v. ii. pp. 650 and 736 ?

Fig. 1. Calyx.—Fig. 2. A Flower; *a*, Calyx; *b*. Corolla.—Fig. 2*. A Flower expanded.—Fig. 3. Germen and Stamens.—Fig. 4. Calyx and Germen.—Fig. 5. Capsule, with the valves separated.—Fig. 6. The same after it has discharged the seeds.—Figs. 7 & 8. Seeds.—*All*, except fig. 7, *more or less, magnified.*

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[*] From *elate*, Gr. *the broad part of an oar;* possibly in allusion to the shape of the leaves. LEIGHTON.

[†] See folio 42, note †.

[‡] See folio 152, *a*.

Localities.—On the margins of ponds and ditches; rare.—*Berks;* Near Binfield: Mr. T. F. Forster.—*Leicestersh.* Pond near Whitwick: Rev. A. Bloxam.—*Shropsh.* About the eastern shore of Bomere Pool, near Condover: Rev. E. Williams. Mere, at Ellesmere: Rev. A. Bloxam. Ellesmere Mere between the House of Industry and Otley Park: J. E. Bowman, Esq.—*Surrey;* Pond at Felbridge: Mr. Edward Jenner.—*Sussex;* Maresfield Mill-pond; and Tilgate Ponds near Crawley: W. Borrer, Esq.—*Warwicksh.* Coleshill Pool: Dr. Lloyd.—WALES. *Anglesea;* At the east end of Llyn Coron, with *Elatine Hydropiper: Br. Fl.* In the Mill-pond, Llyn Maelog, with *Subularia aquatica:* N. B. G.—SCOTLAND. *Perthsh.* At Loch Ruisky, near Callander: Mr. G. Lyon.—IRELAND. On the muddy border of Castlewellan Lake, county of Down: Mr. Templeton. Abundant in Enagh Lough, near Derry; and by the side of the river Bann, below Coleraine: Mr. D. Moore: *Fl. Hib.*

Annual.—Flowers in July, August, and September.

Root of numerous long white fibres, proceeding from the base, and lowermost joints of the stem. *Stems* procumbent, 2 or 3 inches long, alternately branched, leafy, striated, smooth, pale and pelucid. *Leaves* opposite, on very short petioles, elliptical, or inversely egg-shaped, more or less blunt, entire, single-ribbed, or obscurely 3-ribbed, scarcely a quarter of an inch long; rough on the upper surface with minute prominent points. *Peduncles (flower-stalks)* axillary, solitary, alternate, simple, naked, single-flowered, about as long as the leaves. *Flowers* small. *Calyx* in 3, broad, rounded, fleshy segments. *Corolla* of 3, somewhat inversely egg-shaped, concave, reddish, or pale flesh-coloured petals, longer than the calyx. *Stamens* 6; filaments awl-shaped, incurved, not longer than the petals. *Anthers* at first purplish, afterwards yellow. *Styles* 3. *Capsule* of 3 cells, and 3 valves. *Seeds* oblong, blunt, very slightly curved, and most beautifully ribbed, and transversely striated.

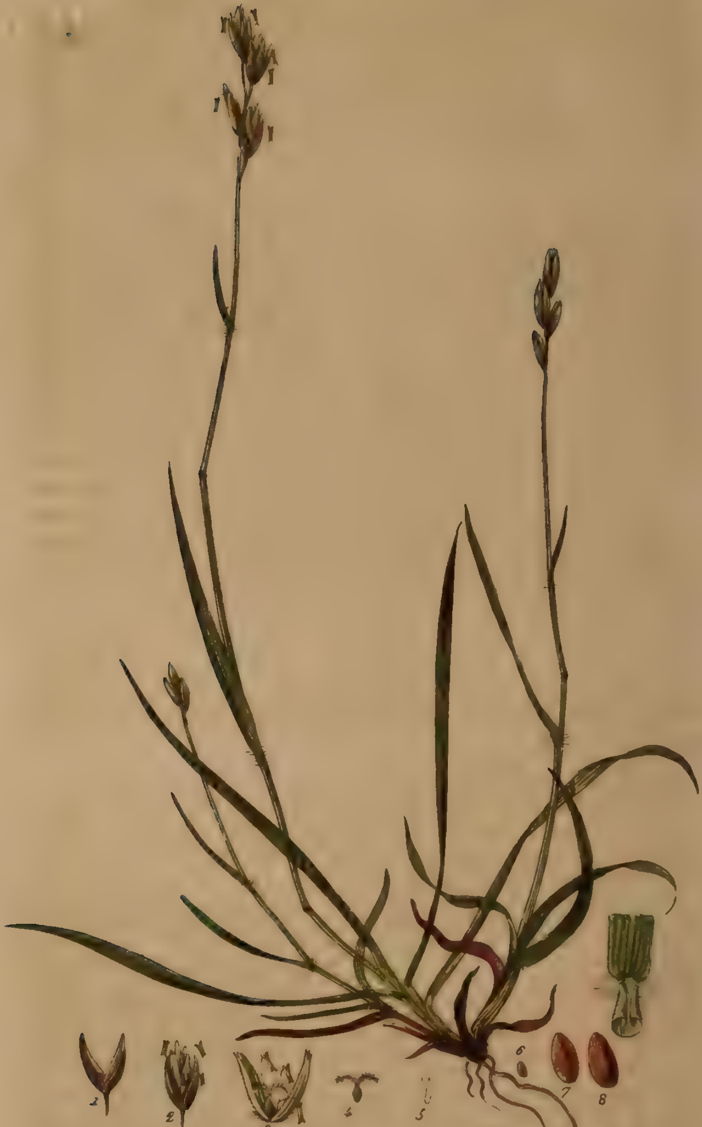
This is a curious little plant, having the general appearance of *Montia fontana*, t. 196. It is of rare occurrence, and was first observed wild in Britain, in 1798, by the Rev. Mr. Williams.

For the specimen from which the drawing for the accompanying plate was made, I am indebted to the kindness of Mr. Edward Jenner, of Lewes, Sussex, who sent it to me from its locality in Maresfield Mill-pond, Sussex, August 14, 1842.

Elatine Hydropiper, Engl. Bot. t. 2670, differs from this species in the greater number of the parts of its fructification, in the strap-shaped, longer, segments of its calyx, and in its seeds being very much curved, not almost straight.

"The world is a glasse wherein we may comtemplate the eternall power and majestie of God: it is that great booke of so large a character, that a man may run and read it; yea, even the simplest man that cannot read, may yet spell out of this booke that there is a God. Every shepheard hath this Calendar, and every ploughman this A. B. C."

Purchas.



Triodia decumbens. _ Decumbent Heath-graſs ♃

Mathews Del & Sc. Pub.d by W. Baxter Botanic Garden Oxford 1840

TRIO′DIA *.

Linnean Class and Order. Tria′ndria †, Digy′nia.

Natural Order. Grami′neæ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th edit.) p. 426.—Gramina, *Linn.*—Graminales; sect. Festucinæ; type, Avenaceæ; Burn. Outl. of Bot. v. i. pp. 359, and 369.

Gen. Char. *Panicle* somewhat racemose. *Calyx* (fig. 1.) of 2 nearly equal, clasping, awnless, pointed, egg-shaped, concave, keeled glumes, containing an egg-shaped, imbricated, tumid *spikelet* (see fig. 2.), about its own length, of several 2-ranked, perfect florets (see figs. 2 & 3.), variously hairy at the base (see fig. 3.), but without any complicated web. *Corolla* (fig. 2.) of 2, rather unequal, egg-shaped, rigid, concave paleæ, closely pressed together transversely; the outer obscurely many-ribbed, not keeled; flat and expanded at the edges; deeply cloven at the summit, with an intermediate dorsal tooth, or awn, longer or shorter than the lateral points; inner smaller, lining the cavity of the outer, fringed; cloven or notched at the point. *Nectary* (fig. 5.) of 2 scales. *Filaments* (see fig. 3.) 3, hair-like. *Anthers* prominent, pendulous. *Germen* (see fig. 4.) oval, flat. *Styles* (see fig. 4.) 2, short, distinct. *Stigmas* cylindrical, feathery. *Seed* (see figs. 6—8.) loose, oval, depressed, convex on the outside, concave on the inner, closely pressed between the unchanged paleæ.

The somewhat racemose *panicle*; the *calyx* of 2 nearly equal glumes, containing 3 or more florets; and the *corolla* of 2 paleæ, the outer one with 3 nearly equal teeth, the middle one of which is straight; will distinguish this from other genera in the same class and order.

One species British.

TRIO′DIA DECUMBENS. Decumbent Heath-Grass,

Spec. Char. Panicle nearly simple, close, upright Calyx-glumes smooth, containing about 4 florets; the middle tooth of their paleæ shortest. Ligula a tuft of hairs.

Gray's Nat. Arr. v. ii. p. 111.—Sm. Engl. Fl. v. i. p. 131.—With. (7th ed.) v. ii. p. 174.—Hook. Brit. Fl. p. 44.—Lindl. Syn. p. 311.—Sincl. Hort. Gram. Wob. p. 377.—Fl. Devon. p. 17.—Johnst. Fl. Berw. v. i. p. 24.—Winch's Fl. of Northumb. and Durh. p. 6.—Walker's Fl. of Oxf. p. 24.—Bab. Fl. Bath. pp. 57 and 100.—Murr. Northern Fl. p. 65.—Dick. Fl. Abred. p. 24.—Irv. Lond. Fl. p. 98.—Baines' Fl. of Yorksh. p. 120.—Mack. Fl. Hibern. p. 306.—*Danthónia decúmbens*, D.C.—Macr. Man. Brit. Bot. p. 268.—Bab. Prim. Fl. Sarn. p. 109.—Leight. Fl. Shropsh. p. 53.—*Festuca decumbens*, Linn. Sp. Pl. p. 110.—Leers' Fl. Herb. p. 34. t. 7. f. 5.—Fl. Dan. t. 162.—With. 1st ed. v. i. p. 53.; 2nd ed. v. i. p. 101.—Huds. Fl. Angl. (2nd ed.) p. 47.—Willd. Sp. Pl. v. i. pt. i. p. 424.—Lightf. Fl. Scot. v. i.

Fig. 1. Calyx.—Fig. 2. Spikelet.—Fig. 3. A Floret.—Fig. 4. Germen, Styles, and Stigmas.—Fig. 5. Nectary,—Figs. 6, 7, & 8. Seeds.—*All, except fig.* 6, *more or less magnified.*

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* From *treis*, Gr. *three;* and *odous*, Gr a *tooth;* alluding to the three teeth of the paleæ.

† See folio 56, note †.

p. 102.—Sibth. Fl. Oxon. p. 46.—Abbot's Fl. Bedf. p. 22.—*Poa decumbens*, With. (3rd ed.) v. ii. p. 147.—Engl. Bot. t. 792 —Knapp's Gr. Brit. t. 59.—Sm. Fl. Brit. v. i. p. 107.—With. (5th ed.) v. ii. p. 194.—Thomps. Pl. Berw. p. 12.—Davies' Welsh Bot. p. 10.—Host. Gr. Austr. v. ii. p. 52. t. 72.—Purt. Midl. Fl. v. i. p. p. 81.—Relh. Fl. Cant. (3rd ed.) p. 37.—Hook. Fl. Scot. p. 36.—Grev. Fl. Edin. p. 24.—Perry's Pl. Varvic. Sel. p. 9.—Mack. Catal. Pl. of Irel. p. 14.—*Melica decumbens*, Web. Gott. p. 3.—*Gramen avenaceum parvum procumbens, paniculis non aristatis*, Ray's Syn. p. 408.—Pluk. Phyt. t. 34. f. 1.—*Gramen triticeum palustre humilius, spicâ breviore*, Moris. v. iii. p. 177. sect. 8. t. 1. f. 6.

LOCALITIES.—In bogs, barren sandy pastures, and on heaths, both in dry and moist situations ; frequent.

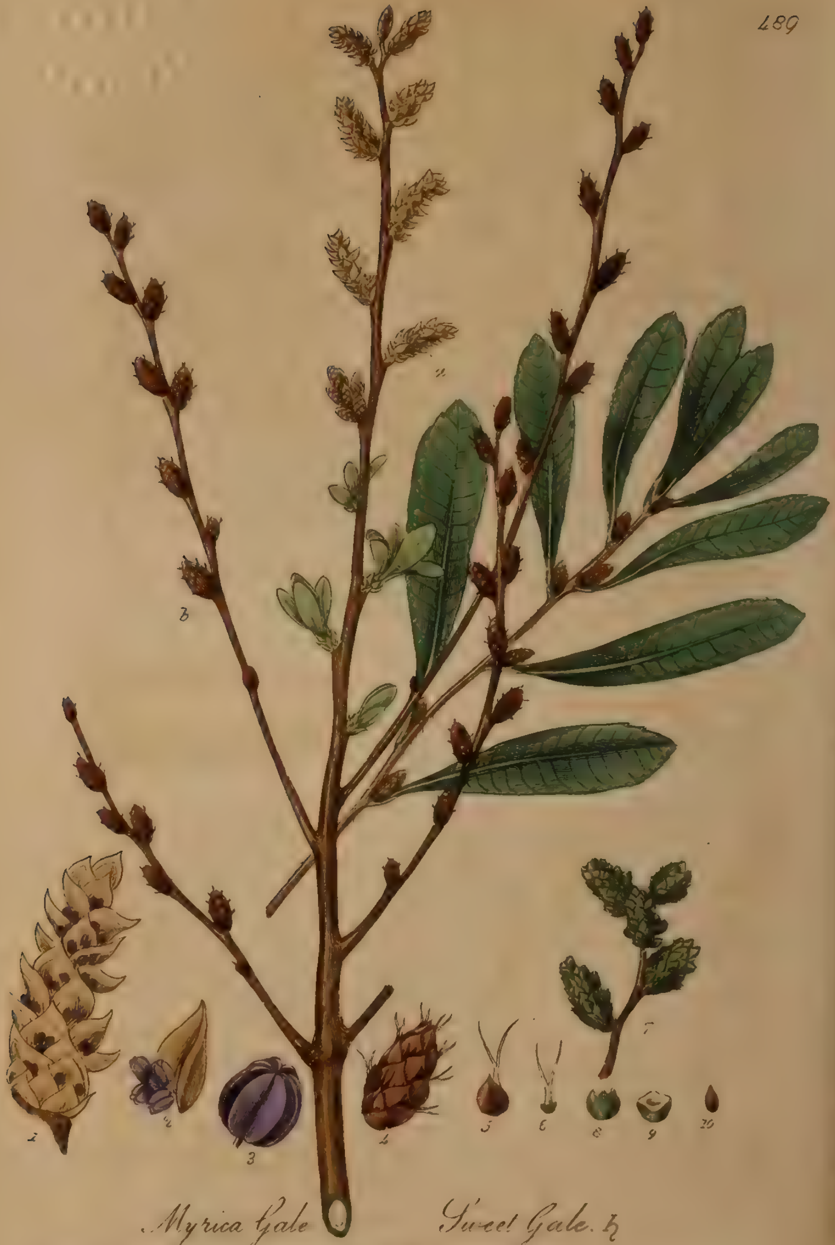
Perennial.—Flowers in July and August.

Root slightly creeping, fibrous. *Culms* from 4 to 18 inches long, decumbent, except when in flower, harsh, rigid, jointed, leafy, striated, and smooth. *Leaves* strap-shaped, taper-pointed, striated, rather glaucous, smooth, except towards the point, where the rib and edges are very rough. *Sheaths* long, striated, hairy especially near the top, entirely divided. *Ligula (stipula)* a tuft of hairs (see fig. 9). *Panicle* very simple, its branches angular, wavy and roughish. *Spikelets* few, turgid, of a violet tinge, containing about 4 florets. *Calyx-glumes* spear-shaped, equal, with a roughish keel. The *Corolla* (see fig. 3.) has two or more dense tufts of shining bristles at its base, with two intermediate depressions. *Outer Palea* with three teeth at the apex, the middle one shortest.

Mr. SINCLAIR says, that this Grass appears to be but little susceptible of improvement by being transplanted to a richer soil ; that it never appeared to be cropped by the Deer in the Park at Woburn ; and that it is late in the production of foliage in the Spring, and produces little after-grass, and is not, therefore, to be recommended for cultivation.

The *Natural Order* GRAMINEÆ is composed of glumaceous monocotyledonous *plants*, with cylindrical, fistular *stems (culms)*, closed at the joints, and covered with a coat of silex. Their *leaves* are alternate, one at each joint, with a sheath slit longitudinally on one side, having a membranous appendage (ligula) at its summit. Their *flowers* are small, and are disposed in spikes, panicles, or racemes, which are more or less branched ; they are usually perfect, but sometimes monœcious or polygamous, and consist of imbricated bracteas, of which the most exterior are called *glumes (calyx*, Linn.*)* (fig. 1.), the interior immediately enclosing the stamens *Paleæ (corolla*, Linn.*)* (fig. 2.), and the innermost at the base of the ovary *scales (nectary*, Linn.*)* (fig. 5.). The *glumes* are usually 2 in number, and alternate ; sometimes single, most commonly unequal, and enclose 1 or many *florets* (see fig. 2). The *florets* (fig. 3) consist of 2 alternate *paleæ*, the lower or exterior one simple, the upper or interior one composed of 2 united by their contiguous margins, and usually with two keels. The *nectary*, when present, consists of 2 scales (see fig. 5.), which are collateral, alternate with the paleæ, and next the lower of them ; either distinct or united. The *stamens* are hypogynous (situated below the germen). The *anthers* are versatile ; the *ovary* is single ; with 2, very rarely 1 or 3, *styles ;* and feathery or hairy *stigmas*. The *pericarp* usually forms one body with the seed ; and the *embryo* is lateral, on one side at the base of the farinaceous *albumen*. See ***Lindl. Syn.*** and ***Hook. Brit. Fl.***, 4th edit.

This family is one of the most natural in the vegetable kingdom, and also one of the highest importance to mankind, as it is composed of the true Grasses ; among which are *wheat, rye, oats, barley, maize, panick, rice, millet*, &c. It is exemplified in the following plates of this work ; viz.—t. 45—56—59—64—68—99—104—108—112—116—144—148—184—192—200—203—208—211—216—247—252—256—288—292—300—324—332—344—348—372—408—412—416—444—448—462—476—480—488—492—496.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Myrica Gale *Sweet Gale.* ♄

Mathews Del & Sc

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MYRI'CA*.

Linnean Class and Order DIŒ'CIA†,, TETRAN'DRIA.

Natural Order. MYRI'CEÆ, *Rich.*—Lindl. Syn. p. 242.; Intr. to Nat. Syst. of Bot. p. 100.—Rich. by Macgilliv. p. 543.—Mack. Fl. Hibern. p. 257.—Hook. Brit. Fl. (4th ed.) p. 420.—MYRICA'CEÆ, Lindl. Key, p. 57.—Loud. Ency. of Tr. and Sh. p. 934.—CASUARINEÆ, Mirbel. in Ann. Mus. v. xvi. p. 451.—R. Brown, in Flinder's Voy. v. ii. p. 571.—AMENTACEÆ, *Linn.*—Juss. Gen. Pl. p. 407.—Loud. Hort. Brit. p. 534 & 535.

GEN. CHAR. *Diœcious*, occasionally *monœcious*. *Sterile Flowers* in cylindrical sessile *catkins* (see fig. 1, & *a*.), loosely imbricated in every direction. *Calyx* (see fig. 2.) a single, egg-shaped, bluntish, concave *scale (bractea* LOUD.*)* to each floret, longer than the stamens. *Corolla* none. *Filaments* (see fig. 2.) 4, rarely more, short, hair-like, upright, *Anthers* (see figs. 2 & 3.) vertical, large, of 2 divided lobes.—*Fertile Flowers* in egg-shaped, sessile *catkins*, closely imbricated (see fig. 4, & *b*). *Calyx* (see fig. 5.) nearly as in the sterile flowers. *Corolla* none. *Germen* (see fig. 6.) egg-shaped, flattish, superior. *Styles* (see figs. 5 & 6.) 2, thread-shaped, spreading, longer than the calyx (bractea). *Stigma* simple, pointed. *Berry (Drupe,* LINDL.*)* (see figs. 8 & 9.) various in substance, of 1 cell. *Seed* (fig. 10.) solitary, upright.

The egg-shaped, sessile *catkins*, with concave *scales*; the *sterile flowers* with from 4 to 6 stamens, with 4-valved *anthers*; and the *fertile flowers* with 2 styles, and a 1-celled, 1-seeded *berry*; will distinguish this from other genera, without a corolla, in the same class and order.

One species British.

MYRI'CA GA'LE. Sweet Gale. Candleberry Myrtle. Dutch Myrtle. Sweet Willow. Gaule.

SPEC. CHAR. Stem shrubby. Leaves spear-shaped, broader upwards, distantly serrated in the upper part. Scales of the catkin pointed.

Engl. Bot. t. 562.—Fl. Dan. p. 327.—Linn. Sp. Pl. p. 1453.—Hud. Fl. Angl. (2nd ed.) p. 432.—Willd Sp. Pl. v. iv. pt. II. p. 745.—Sm. Fl. Brit v. iii. p. 1076; Engl. Fl. v iv. p. 239.—With. (7th ed.) v. ii. p. 250.—Lindl. Syn. p. 242.—Hook. Brit. Fl. p. 435.—Macr. Man. Brit. Bot. p. 217.—Lightf. Fl. Scot. v. ii. p. 613.—Thomps. Pl. of Berw. p. 96.—Davies' Welsh Bot. p. 94.—Pursh. Fl. Amer. Sept. v. ii. p. 620.—Relh. Fl. Cant (3rd ed.) p. 407.—Hook. Fl. Scot. p. 288.—Fl. Dev. pp. 159 & 135 —Johnst. Fl. Berw. v. i. p. 219.—Winch's Fl. of Northumb. and Durh. p. 64.—Loud. Arb. et Frutic. Brit. v. iv. p. 2056. f. 1966.; Ency. of Tr. and Sh. p. 934. f. 1742.—Dick. Fl. Abred. p. 58.—Irv. Lond. Fl. p. 115.—Baines' Fl. of Yorksh. p. 94.—Leight. Fl. of Shrop. p. 493.—Mack. Catal. of Pl. of Irel. p. 85.; Fl. Hibern. p. 257.—*Myrica Brabantica*, Gray's Nat. Arr. v. ii. p. 249.—*Gale frutex odoratus Septentrionalium, Elæagnus Cordo*, Ray's Syn. p. 443.—Bauh. Hist. v. i. pt. II. p. 224, with a figure.—Black. Sp. Bot. p. 25.—*Myrtus brabantica, sive Elæagnus Cordi*, Johns. Ger. p. 1414, with a figure.—Merr. Pin. p 82.—*Rhus sylvestris sive Myrtus Brabantica vel Anglica*, Park. Theat. Bot. p. 1451. f. 5.

Fig. 1, & *a*. Sterile Catkins.—Fig. 2. A separate Flower.—Fig. 3. An Anther.—Fig. 4, & *b*. Fertile Catkins.—Fig. 5. A separate Flower.—Fig. 6. Styles.—Fig. 7. Fertile Ripe Catkins.—Fig. 8. A Berry.—Fig. 9. Section of same.—Fig. 10. A Seed.—All, except *a*, *b*, and figs. 7, 8, 9, & 10, *magnified*.

* From *muron*, Gr. *sweet ointment*; in reference to its fragrance.

† See folio 143.

Localities.—In bogs and marshes, especially on a gravelly soil.—*Berks;* Golden Gully, near Newbury: Mr. Bicheno, in Mavor's *Agr. of Berks.*—*Cambridgesh.* Isle of Ely: Rev. R. Relhan.—*Cheshire;* Near Whitchurch, so plentifully, that the place where it grows is called *Gale Moor:* Mr. Vernon, in Blackst. Sp. Bot.—*Cornwall;* Marsh, Gulval, and Ludgvan: Dr. Forbes. At Swan Pool, near Falmouth; and near St. Just: Rev. J. P. Jones, in Bot. Tour.—*Cumberland;* Common about the Lakes: N. J. Winch, Esq.—*Devon;* Bovey Heathfield, near the Coal Pits; Ilsington; Manaton; Ashburton; Holme, &c.: Fl. Devon.—*Dorset;* About Wareham: Ray.—*Essex;* Found near Mr. Warner's Gravel-pit Pond, at Woodford Row, Woodford: Mr. R. Warner; 1771.—*Hants;* Near Rufus's Monument in the New Forest: Withering. In a bog above a large pond about a mile beyond Itchen Ferry from Southampton: Mr. E. Jenner.—*Kent;* On Willsborough Lees, near Ashford, plentifully: E. Jacob, Esq.; 1777.—*Lancashire;* Halsall Moss; Woolton Moss; and Chat Moss: G. Crosfield, Esq.—*Lincolnsh.* In the Fens: Merrett; 1666.—*Middlesex;* On Hounslow Heath: *ibid.*—*Norfolk;* Dorsingham Moor: Martyn.—*Northumb.* On moors near Harbottle Castle; and by Roadley Lake; on the South side of Tyne opposite Hepple; between Woodhall and Harbottle; and on the banks of Kimmer Lake near Ellingham: Fl. of Northumb. and Durh.—*Shropsh.* In Moreton Moors, three miles from Blymhill: Rev. S. Dickenson. Moss at Walford and Yestalls, near Walford; Marbury Bog; Bogs near Ellesmere; about Lee, near Ellesmere; and at Twyford Vownog near Westfelton, in great abundance: Fl. Shropsh.—*Surrey;* Plentiful in a bog by Cæsar's Camp near Farnham: Mr. W. W. Reeves.—*Sussex;* On Waterdown Forest, abundant by the bridge on the road from Tunbridge Wells to Bellsewe Green, and on each side of the stream as low down as Benbill Water Mill: Mr. E. Jennnr. At Beckley: Mr. W. W. Reeves.—*Westmoreland;* Common about the Lakes: N. J. Winch, Esq.—*Yorksh.* Askham Bogs and Langwith, near York; covering many acres at Lowland; Anstwick Moss; and Newton Dale, near Pickering: Mr. Baines, in Yorksh. Fl.—Not uncommon in Wales.—Abundant in bogs and moorish ground in Scotland and Ireland.

A Shrub.—Flowers in May.

Stems upright, bushy, 3 or 4 feet high, much branched: *branches* alternate, slender, pubescent, rust-coloured, and sprinkled with white dots. *Leaves* alternate, on short petioles, inversely egg-spear-shaped, pointed; entire and tapering towards the base, distantly serrated in the upper part, about an inch and a half long, deciduous, dark green on the upper surface, paler underneath, smooth, but covered with resinous dots, which emit a delightful fragrance when bruised. *Catkins* numerous, sessile, lateral, and terminal, formed during Summer in the axils of the leaves, and remaining through the Winter, expand the following Spring, before the leaves. *Scales* of the sterile catkins of a red shining brown; the lower *ones* of the fertile catkins hairy towards the tip. *Berries* very small, covered with resinous dots, rather globose, angular, taper-pointed, with 3 shallow clefts, a small tooth being fixed to each (see fig. 8). Though the sterile and fertile flowers are generally produced on different plants, they are sometimes found on the same plant.—The specimen from which the drawing for the accompanying plate was made, was kindly communicated to me by my much-esteemed friend Mr. E. Jenner, of Lewes, Sussex, from whom I received a great number of specimens of the same plant, and all, like the one figured, monœcious.

The Myriceæ are monœcious or diœcious, amentaceous *shrubs* with resinous glands and dots, alternate, simple, *leaves*, and apetalous flowers. The *sterile flowers* have from 1 to 8 *stamens;* with 2- or 4-celled *anthers*, opening lengthwise.—Their *fertile flowers* have a 1-celled *ovary*, surrounded by hypogynous persistent scales. Their *fruit* is drupaceous, often covered with waxy secretions, or dry. The *seed* is solitary, and erect; and the *embryo* is without *albumen.*

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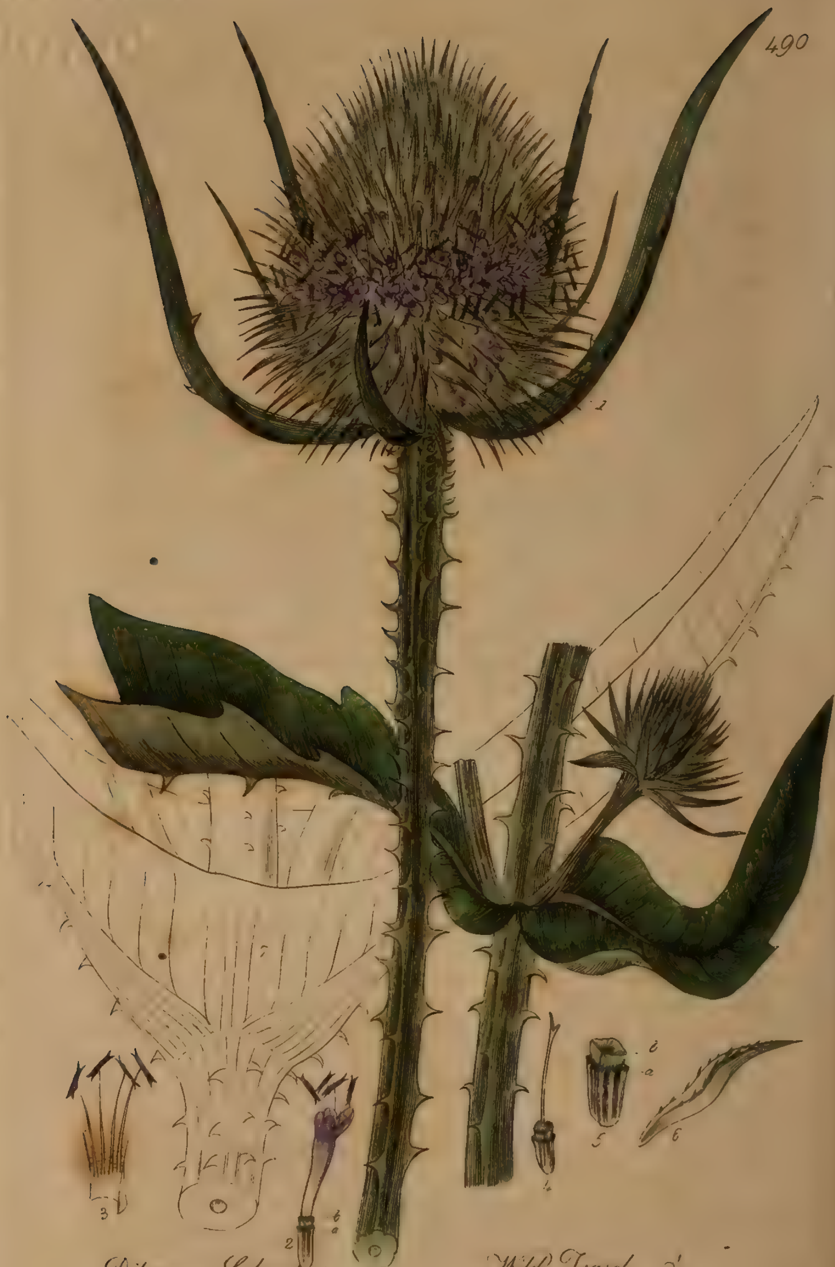
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Dipsacus Sylvestris *Wild Teasel* ♂

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DI′PSACUS[*].

Linnean Class and Order. TETRA′NDRIA[†], MONOGY′NIA.

Natural Order. DIPSA′CEÆ[‡], Juss. Gen. Pl. p. 194.—Sm. Gr. of Bot. p. 125.—Lindl. Syn. p. 139.; Introd. to Nat. Syst. of Bot. p. 196.—Rich. by Macgilliv. p. 457.—Loud. Hort. Brit. p. 520.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 680.—Mack. Fl. Hib. p. 140.—Hook. Brit. Fl. (4th ed.) p. 410.--SYRINGALES; subord. ASTEROSÆ; sect. VALERINÆ; type, DIPSACEÆ; Burn. Outl. of Bot. v. ii. pp. 900, 901, 916, and 918.—AGGREGATÆ, *Linn.*

GEN. CHAR. *Flowers* aggregate. *Involucrum* of many spreading, permanent leaves, (see fig. 1.) longer than the bracteas *(*scales of the receptacle*)* (see fig. 6). *Involucellum (outer calyx)* (fig. 2, *a.* and fig. 5, *a.*) 4-sided, very minute, forming a thickened margin to the germen. *Calyx* (fig. 2, *b.* and fig. 5, *b.*) cup-shaped, ciliated at the margin. *Corolla* (see fig. 2.) of 1 petal, tubular; the limb in 4 or 5 lobes, upright; the outer segment largest. *Filaments* (see figs. 2 & 3.) 4, hair-like, from the mouth of the corolla, longer than its limb. *Anthers* oblong, incumbent. *Germen* (see figs. 2 & 4.) inferior. *Style* (see fig. 4.) thread-shaped, the length of the corolla. *Stigma* simple, or cloven. *Seed* (see figs. 4 & 5.) solitary, oblong, angular, with 8 depressed pores, crowned with the calyx, and inclosed within the involucellum. *Receptacle* of the flowers conical, beset with the *bracteas* or *scales* (see fig. 6.), which separate the flowers, and extend beyond them.

The many-leaved *involucrum*, longer than the bracteas; the 4-sided *involucellum*, forming a thickened margin to the germen; the cup-shaped *calyx;* the solitary *seed;* and the *receptacle* with scales, or bracteas, extending beyond the flowers; will distinguish this from other genera, with a monopetalous, superior corolla, in the same class and order.

Three species British.

DI′PSACUS SYLVE′STRIS. Wild Teasel. Venus's Basin.

SPEC. CHAR. Stem prickly. Leaves opposite, usually connate at the base. Scales of the Receptacle straight at the extremity. Leaves of the Involucrum curved upwards.

Engl. Bot. t. 1032.—Curt. Fl. Lond. t. 202.—Jacq. Fl. Austr. t. 402.—Fl. Dan. t 965.—Johnson's Gerarde, p. 1167. f. 2.—Park. Theatr. p. 984. f. 2.—Ray's Syn. p. 192 —Threl. Syn. Hibern.—Linn. Syst. Veg. (15th edit.) p. 147.—Willd. Sp. Pl. v. i. pt. I. p. 544.—Sm. Fl. Brit. v. i. p. 168.; Engl. Fl. v. i. p. 193.—With. (7th ed.) v. ii. p. 216.—Gray's Nat. Arr. v. ii. p. 475.—Lindl. Syn. p. 139.—Hook. Brit. Fl. p 60.—Macr. Man. Brit. Bot. p. 115 —Don's Gen. Syst. of Gard. and Bot. v. iii. p. 682.—Sibthorp. Fl. Oxon. p. 54.—Abb. Fl. Bedf. p. 29.—Davies' Welsh. Bot. p. 14.—Purt. Midl. Fl. v. i. p. 94.—Relh. Fl. Cant. (3rd ed) p. 55.—Hook. Fl. Scot. p. 49.—Grev. Fl. Edin. p. 34.—Fl. Dev. pp. 25 and 161.—Johnst. Fl. Berw. v. i. p. 35.—Winch's Fl. of Northumb. and Durh. p. 9.—Walker's Fl. Fl. of Oxf. p. 34.—Bab. Fl. Bath. p. 24.; Prim. Fl. Sarn. p. 49.—Irv. Loud. Fl.

Fig. 1. Involucrum.—Fig. 2. A separate Flower; *a.* the Involucellum; *b.* the Calyx.—Fig. 3. Stamens.—Fig. 4. Germen, Style, and Stigma.—Fig. 5. Fruit, crowned with the involucrum, *a;* and the calyx, *b.*—Fig. 6. A Bractea.—Fig. 7. Portion of the stem, showing a pair of leaves united at the base, and forming a kind of cup or basin.

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[*] From *dipsao*, Gr. *to be thirsty;* probably from the connate leaves holding water.

[†] See fol. 114, note †.

[‡] See fol. 179, *a.*

p 155.—Luxf. Reig. Fl. p. 11.—Cow. Fl. Guide, p. 29.—Baines' Fl. of Yorksh. p. 55.—Leight. Fl. of Shropsh. p. 67.—Gulliv. Pl. of Banb. p. 3.—Beesley's Hist. of Banb. p 582.—Mack. Catal. Pl. of Irel. p. 17. ; Fl. Hibern. p. 141.—*Dipsacus fullonum*, Lightf. Fl. Scot. v. i. p. 113.—*D fullonum, a.* Linn. Sp. Pl. p. 140.—Huds. Fl. Angl. (2nd ed.) p. 61.—*Labrum Veneris*, Lob. Icon. v, ii. p. 25, with a figure.

Localities.—In hedges and woods; and by road-sides, and sides of wet ditches, rivers, canals. &c. ; frequent.

Bienniel.—Flowers in July and August.

Root simple, with large fibres. *Stem* upright, from 3 to 6 feet high, branched, cylindrical, polished, striated, leafy, hollow, prickly, prickles near the base but few, near the heads very numerous, long, and sharp. *Root-leaves* (of the first year's plant) egg-oblong, bluntish, spread on the ground in a circular form, notched, wrinkled, and rough with prickles thinly scattered over the leaf; *stem-leaves* opposite, sessile, connate at the base, especially the lower ones, strap-spear-shaped, occasionally waved or toothed, smooth, with a strong midrib, which is furnished with distant hooked prickles on the under side. *Heads of Flowers* numerous, oblong-egg-shaped, terminating the stem and branches; on strongly ribbed and furrowed stalks, their ribs set with strong, projecting prickles. *Involucrum* of many leaves, outer ones longer than the head of flowers, inner ones shorter, all curved upwards, their margins and mid-ribs prickly. *Corolla* light purple or lilac, 4-cleft, those about the middle of the head opening first. *Scales* of the receptacle *(bracteas)* (see fig. 6.) as long as the stamens, rigid, bearded, hollow and somewhat triangular at bottom ; straight and taper pointed at the summit.

This species is a native of most parts of Europe, also of Siberia ; it affords a good example of what is termed a *connate leaf (folium connatum)*. The leaves are opposite, and so united at the base as to form a kind of cup, in which the rains collect, so that the stem is completely surrounded by water at the places from which the leaves arise. The water thus collected is said to cure warts on the hands, if several times washed with it, and to serve as a beauty wash for the face ; hence Ray conjectures that this plant might have received its name of *Labrum Veneris*. It is also supposed to be good for the eyes. " In desert countries," says an ingenious author, " the weary and severed traveller would often exchange the whole of his property for the luxury of a draught from one of these water-lodging plants ; but in this country the moisture is of more use to the plant itself than to the passenger or to the possessor."—" Indeed," observes Dr. Withering, " this curious structure would appear, in the present instance, to be rather destructive than preservative of animal life, for in the basins formed by these connate leaves, many insects are drowned ; so that *Dipsacus* may rank among the vegetable *Muscicapæ*."—Mr. Francis, in his *Little English Flora*, says, that the old receptacles are called by the country children of Essex, and other places, Barber's Brushes, and they form, when the seeds have fallen out, if not a good-shaped, at least a very penetrating hair brush.—Cattle in general, even the Ass, appear to avoid this plant ; and its dried stems usually remain through the Winter.

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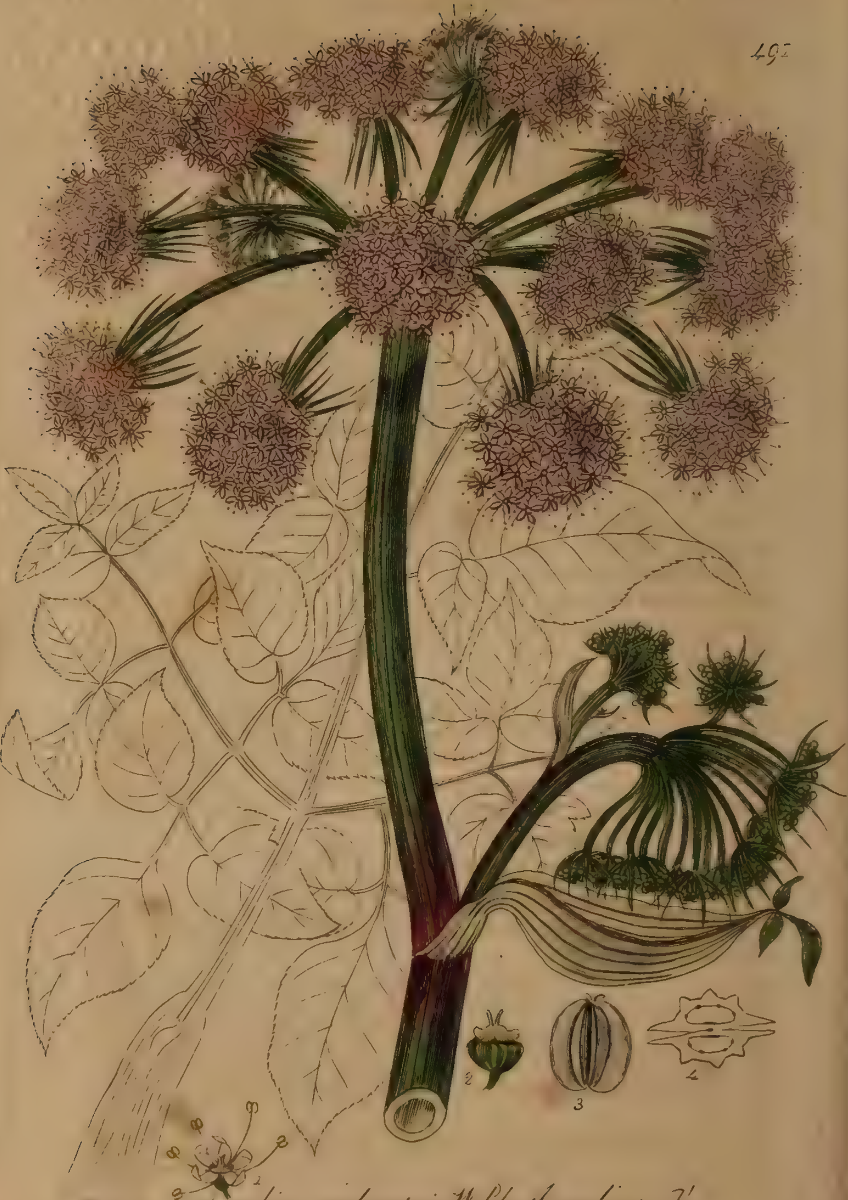

Angelica sylvestris Wild Angelica. ♃

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ANGE′LICA[*].

Linnean Class and Order. PENTA′NDRIA[†], DIGY′NIA.

Natural Order. UMBELLI′FERÆ[‡], Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. & Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, ANGELICACEÆ; subtype, ANGELICIDÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, 773, and 774.

GEN. CHAR. *Flowers* all perfect, prolific, and regular. *Calyx* none. *Corolla* (see fig. 1.) of 5 equal, spear-shaped, flattish, entire petals, straight or incurved at the point, contracted at the base. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, longer than the corolla. *Anthers* roundish. *Germen* (see fig. 2.) inferior, egg-shaped, strongly furrowed. *Styles* (see fig. 2.) 2, in the flower very short, upright, broad and tumid at the base; subsequently elongated, and recurved. *Stigmas* capitate. *Floral Receptacle* (see fig. 2.) thin, wavy, projecting a little beyond the bases of the styles as the fruit advances to maturity. *Fruit* (figs 3 & 4.) not prickly nor beaked, compressed at the back, with two wings on each side. *Carpels* (*seeds*, SM.) with 5 primary *ridges*, of which the 3 dorsal ones are elevated and filiform, and the 2 lateral ones dilated into a wing twice as broad as the rest. *Interstices* (*channels*) with one or more *vittæ*. *Seed* nearly flat on one side, convex on the other.—*Universal Involucrum* few-leaved or none; *partial involucrum* many-leaved. *Flowers* white or purplish.

The obsolete *calyx;* the *corolla* of 5 spear-shaped, entire petals, straight or incurved at the point; the flat, not prickly *fruit;* and the *carpels* with 3 elevated dorsal ridges, the two lateral ones spreading into the broad wings of the fruit; will distinguish this from other genera in the same class and order.

Two species British.

ANGE′LICA SYLVESTRIS. Wild Angelica.

SPEC. CHAR. Leaflets equal, egg-shaped, serrated at the base, somewhat lobed. Fruit with the interstices of the ridges having single vittæ.

Engl. Bot. t. 1128.—Ray's Syn. p. 208.—Johnson's Gerarde, p. 999. f. 2.—Park. Theatr. Bot. p. 940. f. 2.—Linn. Sp. Pl. p. 361.—Huds. Fl. Angl. (2nd ed.) p. 118.—Willd. Sp. Pl. v. i. pt. II. p. 1429.—Woodv. Med. Bot. Suppl. p. 139. t. 265.—Sm. Fl. Brit. v. i. p. 311.; Engl. Fl. v. ii. p. 81.—With. (7th ed.) v. ii. p. 378.—Gray's Nat. Arr. v. ii. p. 519.—Lind. Syn. p. 117—Hook. Brit. Fl. p. 119.—Decand. Prod. v. iv. p. 168—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 323.—Macr. Man. Brit. Bot. p. 102.—Lightf. Fl. Scot. v. i. p. 160.—Sibthorp. Fl. Oxon. p. 96.—Abb.

Fig. 1. A separate Flower.—Fig. 2. *Germen, Floral Receptacle, Styles,* and *Stigmas.*—Fig. 3. A Fruit.—Fig. 4. Transverse section of the same.—*All magnified.*

[*] From *Angelus*, Lat. *an Angel;* from its most agreeable odour, and its cordial and medicinal properties.

[†] See folio 48, note †.

[‡] See folio 235, *a*.

Fl. Bedf. p. 61.—Thomp. Pl. of Berw. p. 31.—Davies' Welsh Bot. p. 28.—Purt. Midl. Fl. v. i. p. 144.—Relh. Fl. Cant. (3rd ed.) p. 117.—Hook. Fl. Scot. p. 90.—Grev. Fl. Edin. p. 64.—Fl. Devon. p. 50.—Johnst. Fl. Berw. v. i. p. 70.—Winch's Fl. of Northumb. and Durh. p. 19.—Walker's Fl. of Oxf. p. 83.—Bab. Fl. Bath. p. 20.; Prim. Fl. Sarn. p. 44.—Dick. Fl. Abred. p. 31.—Irv. Lond. Fl. p. 196.—Luxf. Reig. Fl. p. 25.—Bain' Fl. of Yorksh p. 45.—Leigh. Fl. of Shropsh. p. 127.—Gull. Pl. Banb. p. 6.—Beesl. Hist. of Banb. p. 581.—Mack. Catal. Pl. of Irel. p. 28.; Fl. Hibern. p. 116.—*Angelica sylvestris major*, Bauh. Pin. p. 155.—*Angelica palustris*, Riv. Pentap. Irr. t. 17.—*Water Angelica*, Pet. H. Brit. t. 24. f. 10.—*Imperatoria sylvestris*, Decand. Fl. Fr. v. iv. p. 286.

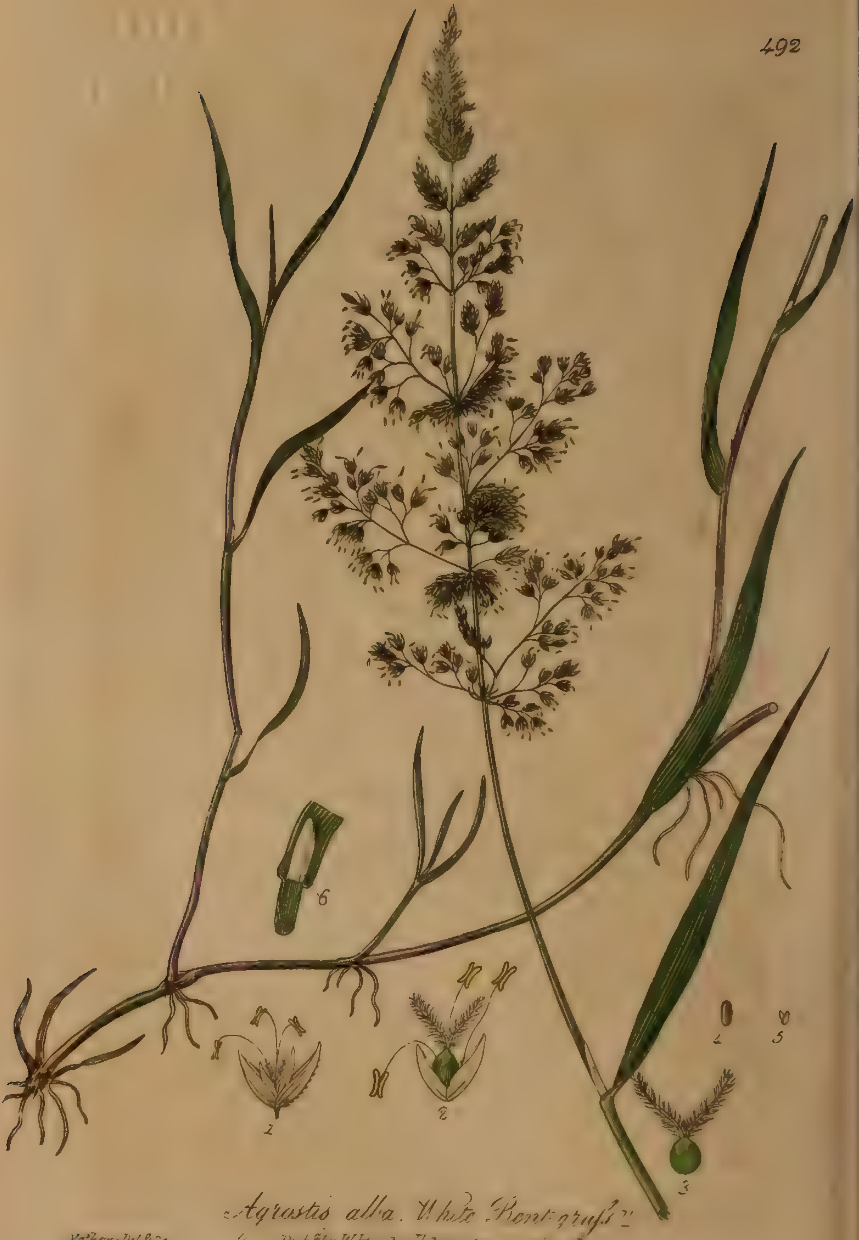
LOCALITIES.—Moist woods, marshy places, and along the banks of rivers and wet ditches; frequent.

Perennial.—Flowers in July and August.

Root thick, tapering, branched, and fibrous. *Stem* upright, from 3 to 5 feet high, branched, leafy, hollow, cylindrical, striated, smooth, pollished, often purplish, covered upwards with a fine glaucous pubescence which easily rubs off. *Leaves* alternate, large, compound, twice- or thrice-pinnate, a little glaucous; *leaflets* egg-shaped or egg-spear-shaped, pointed, unequally and sharply serrated, never decurrent at the base. *Petioles* (*leaf-stalks*) channelled on the upper surface, those of the stem-leaves especially very much dilated and tumid at the base; somewhat membranous, and many-ribbed. *Umbels* large, convex, with numerous, downy, *general* and *partial rays*. *Universal Involucrum* none, or of 1 or 2 small slender leaves: *partial Involucrum* of many similar leaves, but smaller. *Flowers* numerous, small, white, or more generally flesh-coloured. *Petals* nearly equal, somewhat egg-shaped, pointed, their points uprightish. *Fruit* roundish, small, the channels with single *vittæ*.

This is a large, handsome, herbaceous plant; native of Europe, Siberia, and Caucasus. It is warm, acrid, bitter, and aromatic; but the cultivated kind (*Angelica Archangelica*) possessing those properties in a higher degree, this has been long neglected. The caterpillar of the swallow-tailed Butterfly (*Papilio Machaon*, Shaw's Nat. Misc. v. xi. t. 398.) is said to feed upon it. Cows, goats, and swine eat it; horses refuse it. It renders hay ungrateful to cattle. The herb is said to dye a good yellow. A species of *Erysiphe* is frequent on the living leaves of this species in the Summer and Autumn, about Oxford; and on the dead stems, in the Winter and Spring months, may be found the following parasitic fungi—*Sphæ'ria Doliólum*, Pers.; *Sphæ'ria herbarum*, Pers.; and *Phacídium Patélla*, Tode. The latter is a beautiful species, and is not uncommon in a perfectly developed state in Bagley Wood, near Oxford. My specimens were collected in May, on dead stems that had remained through the preceding Winter.

The other British species of Angelica, *Angelica Archangelica*, (*Archangelica officinalis*, of HOFFMANN, DECANDOLLE, and LINDLEY,) is distinguished from this by its much larger size, its lobed terminal leaflet, and especially by its seed being free and covered all over with numerous *vittæ*.



Agrostis alba. White Bent-grass.

Mathews Del & Sc

Pub.d by W. Baxter Botanic Garden Oxford [illegible]

AGRO'STIS *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ, Juss. Gen. Pl. p. 28.—Sm. Gram. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Rich. by Macgilliv. p. 393.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th edit.) p. 426.—GRAMINA, *Linn.*—GRAMINALES; sect. FESTUCINÆ; type, AGROSTIDACEÆ; Burn Outl. of Bot. v. i. pp. 359, and 371.

GEN. CHAR. *Inflorescence* panicled. *Panicle* loose. *Spikelets* (fig. 1.) single-flowered. *Calyx* (see fig. 1.) of 2 rather unequal, pointed, keeled, folded, clasping, awnless, permanent glumes, longer than the corolla. *Corolla* (see fig. 2.) of 2 unequal, membranous, ribbed paleæ, unchanged after flowering, with a tuft or two of hairs at the base; the larger palea bearing, constantly in some species, a rough, dorsal *awn*, which in others is most generally wanting; the smaller palea constantly awnless, more membranous, various in size, and occasionally wanting. *Nectary* of 2 minute scales, sometimes combined. *Filaments* (see figs. 1 & 2.) 3, hair-like, longer than the glumes. *Anthers* deeply divided at each end. *Germen* (see figs. 2 & 3.) egg-shaped. *Styles* (see figs. 2 & 3.) 2, short. *Stigmas* densely feathery *Seed* (fig. 4.) egg-shaped, pollished, loose, wrapped in the unaltered corolla.

The loose *panicle;* the single-flowered *spikelets;* the *calyx* of 2 rather unequal *glumes*, longer than the corolla; the *corolla* of 2 unequal, membranous *paleæ*, the inner sometimes wanting, the outer with or without an *awn;* and the loose *seed;* will distinguish this from other genera in the same class and order.

Five species British.

AGRO'STIS ALBA. White Bent-grass. Marsh Bent-grass. White Squitch. Squitch.

SPEC. CHAR. Branches of the panicle hispid; branchlets spreading. Calyx-glumes spear-shaped, bristly at the keel. Stem spreading, creeping. Stipula (ligula) oblong, ribbed (see fig. 6).

Engl. Bot. t. 1189.—Linn. Sp. Pl. p. 93.—Willd. Sp. Pl. v i. pt. I. p. 371.—Sm. Fl. Brit. v. i. p. 81; Engl. Fl. v. i. p. 93.—With. (7th ed.) v. ii p. 156.—Lind. Syr. p. 203.—Hook. Brit. Fl. p. 34.—Macr. Man. Brit. Bot. p. 262.—Lightf. Fl. Scot. v. i. p. 93?—Sibth. Fl. Oxon. p. 37.—Abbot's Fl. Bedf. p. 14.—Davies' Welsh Bot. p. 8.—Schrad. Fl. Germ. v. i. p. 209, *α* & *β*, t. 2. f. 1.—Purt. Midl. Fl. v. i. p. 70.—Relh. Fl. Cant. (3rd ed.) p. 30.—Hook. Fl. Scot. p. 25.—Grev. Fl. Edin. p. 17.—Fl. Devon. pp. 12 & 121.—Johnst. Fl. Berw. v. i. p. 20 —Winch's Fl. of Northumb. and Durh. p. 5.—Walker's Fl. of Oxf. p. 19.—Bab. Fl. Bath. p. 56.; Prim. Fl. Sarr. p. 107.—Murr. Northern Fl. p. 49 —Dick. Fl Abred. p 23.—Luxf. Reig. Fl. p. 7.—Cow. Fl. Guide. p. 19.—Baines' Fl. Yorksh. p. 118.—Leight. Fl. of Shropsh. p. 57.—Beesl. Hist. of Banb. p. 591.—Mack. Catal. Pl. of Irel. p. 12; Fl. Hibern. p. 298.—*Agrostis mutabilis*, Knapp. Gram. Brit. t. 28 —*A. polymorpha*, var. *palustris*, Huds Fl. Angl. (2nd ed) p. 32.—*A. palustris*, Sincl. Hort. Gram. Wob. p. 348.—*A. capillaris*, Leers' Fl. Herb. p. 20. t. 4. f. 3?—*A. stolonifera lati-*

Fig. 1. Calyx, Corolla, &c.—Fig. 2. Corolla.—Fig. 3. Germen and Styles.—Fig. 4. Seed.—Fig. 5. Nectary.—Fig. 6. Stipula.—*All magnified.*

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* From *agros*, Gr. *a field;* given by the Greeks to grasses generally, from their abundance in such situations.

† See folio 56, note †.

‡ See folio 488, *a*.

folia, Sincl. Hort. Gram. Wob. p. 347; also *aristata*, p. 345.—*Vilfa alba*. Gray's Nat. Arr. v. ii p. 145.—*Gramen miliacæum majus, paniculâ spadiceâ*, n. 11; and also *paniculi viridi*, n. 12. Dill. in Ray's Syn. p. 404.

Localities.—In moist meadows and fields; common.

Perennial.—Flowers in July and August.

Root fibrous. *Culms* (*stems*) 2 or 3 feet long, decumbent, more or less branched, smooth, striated, leafy, sending out roots from the lower joints. *Leaves* flat, broad, taper-pointed, ribbed, very rough, especially at the edges. *Sheaths* long, striated, smooth, occasionally rough, entirely divided. *Stipula* (*ligula*) oblong, blunt, torn. *Panicle* from 2 to 6 inches, or more, long, rather contracted, especially before flowering, its *branches* spreading, unequal, waved, rough, pale green or purplish. *Calyx-glumes* nearly equal, spear-shaped, smooth, except on the keel. *Corolla* of 2 unequal, pale, thin, membranous *paleæ*, the *anther* of which is largest, and has 5 nerves, and as many teeth; the *inner* is smaller, and only faintly 2- or 3-nerved at the base, with a blunt, nearly entire point. *Styles* very short, *Stigmas* thick and feathery.

When the *culms* become more extensively creeping, and the branches of the *panicle* densely tufted, it is then the *Agrostis stolonifera* of LINNÆUS, and also of Engl. Bot t. 1532; Mart. Fl. Rust. t. 120; Knapp's Gram. Brit. t. 27. and t. 116.; and Loudon's Encyclopædia of Agriculture, p. 892. par. 5687. It is also the *Agrostis alba* of Leers' Fl. Herborn. p. 21. t. 4. f. 5.; and the *Gramen caninum supinum*, or *Upright Dog's-grass*, of JOHNSON'S edition of GERARDE'S *Herbal*, p. 26. f. 1.

This variety of *Agrostis alba* is considered to be the same with the *Fiorin-grass* of Dr. RICHARDSON, and the Irish Agriculturists, but it has never been cultivated to any extent in this country, though in Ireland its produce, on moist peat soils, and bogs, is said to be very great. Dr. RICHARDSON, who first brought this grass into notice, (in 1809,) considered it to be superior to all other grasses, and wrote several pamphlets to recommend its cultivation. In those pamphlets many experiments are detailed, tending to prove that *Fiorin-grass* produces hay preferred by cattle to all other, and near treble the quantity afforded by any other grass; that this enormous produce is not the exhausting effect of a single year, but the regular crop to be expected; that this succulent grass is equally serviceable for Winter green food; that it is, in a great degree, indifferent to the extremes of wet or draught, and perfectly insensible to the severities of cold; and that its universality of growth is most remarkable. It abounds in morasses and moors where other grasses cannot contend with it, on thin dry soil as well as wet, extending up the bleakest mountains of our harsh climates, and therefore appears particularly suitable to unproductive, extensive tracts. (See WITHERING'S *Arrangement of Brit. Plants*, 7th edit. v. ii. p. 158). On dry soils this grass is said to be worth nothing. Tea has been made from *fiorin*, and found useful in rearing calves, being mixed with oatmeal and skimmed milk.

Much information relating to this Grass may be found in the "Letters and Papers of the Bath and West of England Agricultural Society," v. xiii p. 1—53; CURTIS'S "Observations on the British Grasses, 5th ed. p. 91—98; DUTTON'S "Agricultural Survey of the County of Galway," p. 128—134; and LOUDON'S "Encyclopædia of Agriculture," p. 892.

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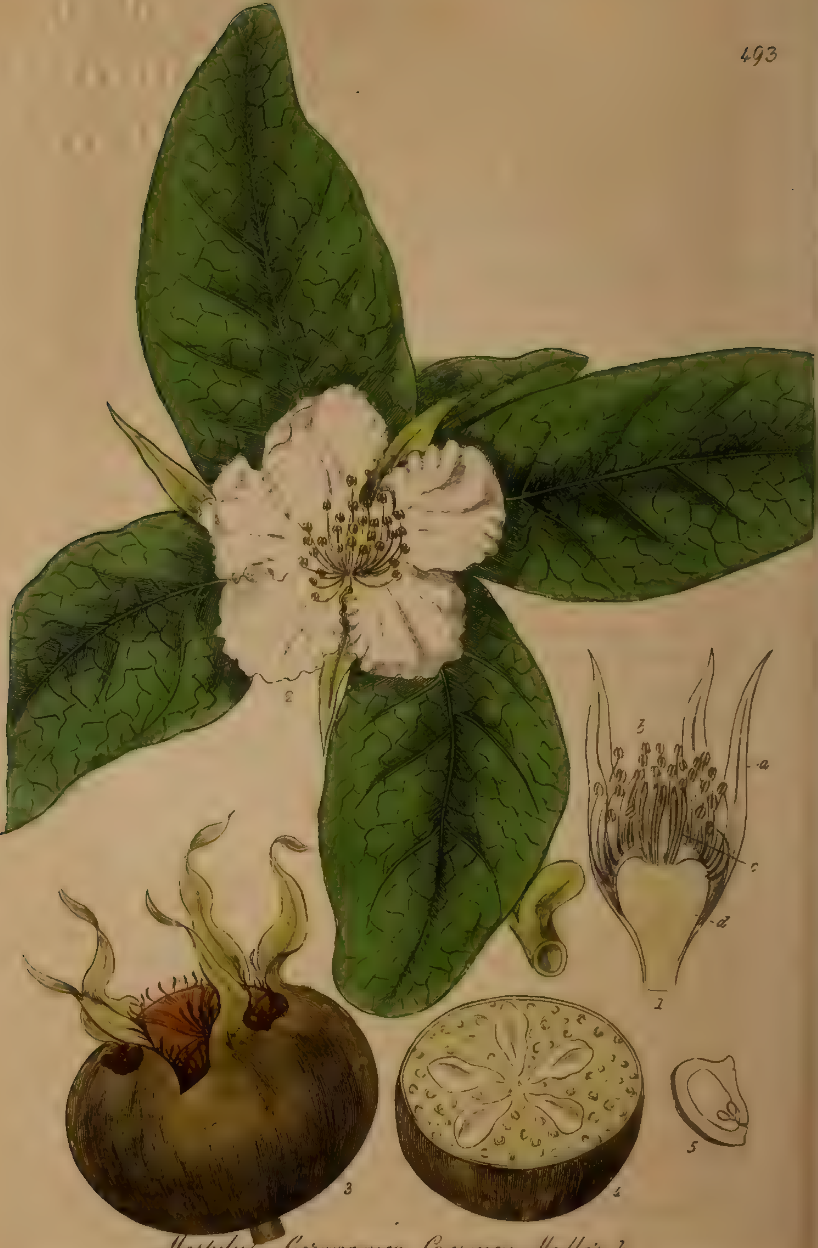

Mespilus Germanica. Common. Medlar ♄

Ruſsell Del.

Pubd by W Baxter Botanic Garden, Oxford 1842.

Mathews Sc

ME'SPILUS *.

Linnean Class and Order. Icosa'ndria †, Pentagy'nia.

Natural Order. Poma'ceæ ‡, *Linn.*—Lindl. in Tr. of Linn. Soc. v. xiii. p. 93.; Syn. p. 103.; Introd. to Nat. Syst. of Bot. p. 83.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 597.—Rosa'ceæ; tribe, Poma'ceæ, Juss. Gen. Pl. p. 334.—Sm. Gram. of Bot. pp. 171 and 172.—Rich. by Macgilliv. pp. 528 & 530.—Loud. Hort. Brit. pp. 512 & 513.—Hook. Brit. Fl. (4th edit.) p. 405.—Rosales; subtype, Pyridæ, Burn. Outl. of Bot. v. ii. pp. 614 & 695.

Gen. Char. *Calyx* (fig. 1, *a.*) superior, of 1 sepal, in 5 deep, leafy, permanent segments. *Corolla* (fig. 2.) of 5 roundish, concave, wavy petals, attached to the rim of the calyx. *Filaments* (fig. 1, *b.*) about 20, awl-shaped, incurved, fixed to the rim of the calyx, within the petals. *Anthers* roundish, 2-lobed. *Germen* (fig. 1, *d.*) inferior, turbinate or roundish. *Disk* large, secreting much honey. *Styles* (fig. 1, *c.*) 2 to 5, upright, smooth. *Fruit* (fig. 3.) turbinate, 5-celled, with the upper ends of the cells, which are bony, exposed. *Seeds* (see figs. 4 & 5.) 2 in each cell, upright, inversely egg-shaped, blunt, pointed at the base, where they are attached.

The superior, monophyllous *calyx*, in 5 deep, leaf-like, permanent segments; the *corolla* of 5 roundish petals; the large, honey-bearing *disk*; the smooth *styles*; and the turbinate, 5-celled *fruit*, with the upper ends of the cells, which are bony, exposed; will distinguish this from other genera in the same class and order.

One species British.

ME'SPILUS GERMA'NICA. German Medlar. Common Medlar.

Spec. Char. Leaves spear-shaped, undivided, a little downy, but most so beneath. Flowers solitary, nearly sessile, terminal. Styles five.

Engl. Bot. t. 1523.—Linn. Sp. Pl. p. 684.—Huds. Fl. Angl. (2nd ed.) p. 217.—Willd. Sp. Pl. v. ii. pt. II. p. 1010.—Sm. Fl. Brit. v. ii. p. 530; Engl. Fl. v. ii. p. 360.—With. (7th ed.) v. iii. p. 599.—Gray's Nat. Arr. v. ii. p. 566.—Lindl. Syn. p. 104.—Hook. Brit. Fl. p. 221.—Macr. Man. Brit. Bot. p. 74.—Decand. Prod. v. ii. p. 633.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 605.—Loud. Encycl. of Gard. (new edit.) p. 905. paragr. 4873.; Arb. et Frutic. Brit. v. ii. p. 877.; and v. vi. t. 123.; Encycl. of Tr. and Shr. p. 415. f. 759.—Rev. G. E. Smith's Pl. of S. Kent, p. 28.—Fl. Devon. pp. 83 & 170.—Bab. Prim. Fl. Sarn. p. 34.—Irv. Lond. Fl. p. 251.—Luxf. Reig. Fl. p. 43.—*Mespilus*, Dod. Pempt. p. 801, with a figure.—Trag. Hist. p. 1014, with a figure, Dill. in Ray's Syn. p. 453.—*Mespilus sativa*, Johns. Ger. p. 1453. f. 1.—*Mespilus vulgaris*, Park. Parad. p. 568. t. 569. f. 3.

Fig. 1. A Flower, deprived of its petals.; *a.* Calyx; *b.* Stamens; *c.* Styles; *d.* Section of the Germen.—Fig. 2. Corolla.—Fig. 3. A Fruit.—Fig. 4. Transverse section of Fruit.—Fig. 5. Section of the Seed.

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* From *mesos*, Gr. the *half*; and *pilos*, Gr. a *bullet*; the fruit resembling half a bullet.

† See folio 100, note †.

‡ See folio 402, *a*.

Localities.—In hedges; very rare.—*Cheshire;* In all the hedges about Minshull: Mr. Du Bois, in *Ray's Syn.—Devon;* In a hedge on the right-hand side of the Biddeford road, near the Marsh, about six miles and a half from Barnstable: Polwhele. In an exposed hedge, parting a furze brake, at Leawood, the seat of C. P. Hamlyn, Esq., in the parish of Bridstow; the seeds may have been originally conveyed there by birds: *Fl. Devon.—Kent;* In a wood upon Broadmead near the road to the Cherry Garden: Rev. G. E. Smith. —*Surrey;* In its wild, thorny state. in a hedge near the top of Redstone Hill, left-hand of the Nutfield road, where I have observed it for many years: Mr. Luxford, in *Reig. Fl.—Sussex;* About Ashburnham, truly wild; Rev. J. Davies. Hedges in two places at Henfield, and one in Hurstpier-point: N.B.G. Two or three trees, apparently wild, in Ore Lane, Hastings, on the right, just before coming to the descent near Dr. Fearon's house; woods at the Old Road, Hastings; hedges at the back of St. Leonard's, between Catfield and Ninfield: Dr. W. A. Bromfield, in N. B. G.—*Worcestersh.* In a coppice bordering Deerhurst Lane, opposite the Lower Lodge, near Tewkesbury, a spot almost overgrown with underwood, the lane being merely a rough horse-track: Mr. E. Lees.

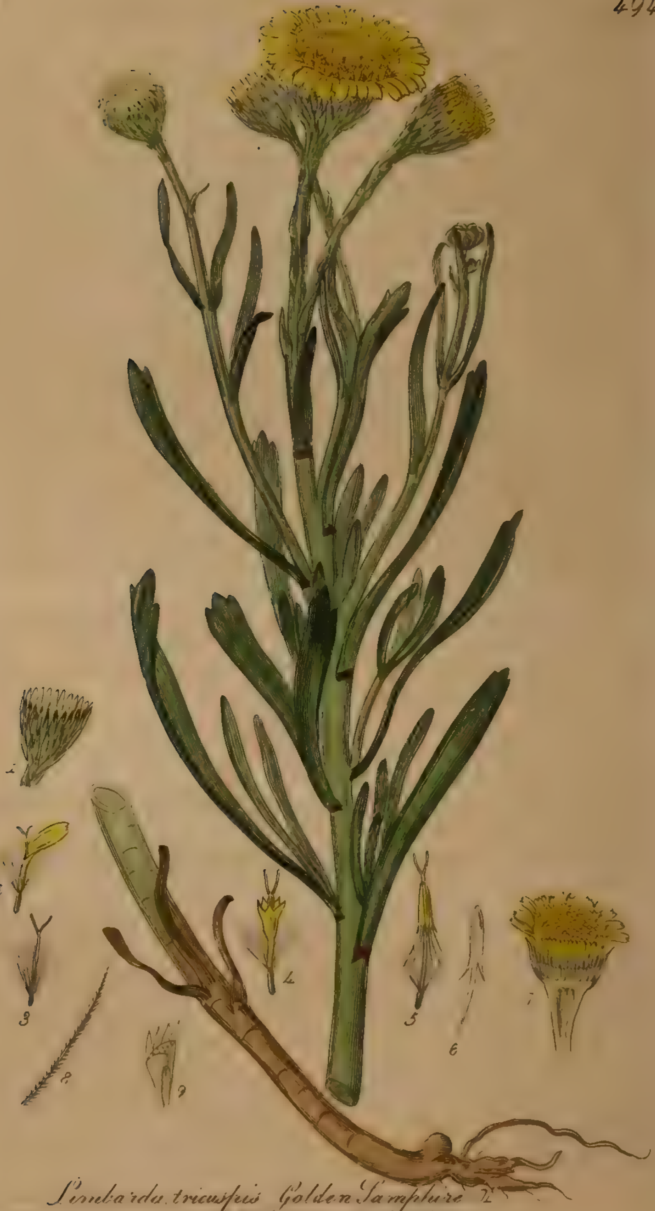
Tree.—Flowers in May and June.

A small or middle-sized branching tree. *Branches* spreading; thorny in a wild state, covered with an ash-coloured bark. *Leaves* deciduous, alternate, spreading, on short petioles, oblong-spear-shaped, wavy, generally entire, single-ribbed, 4 or 5 inches long, mostly downy beneath; assuming a handsome stellate form of growth. *Flowers* (see fig. 2.) solitary, at the summit of each branch, on short downy peduncles (flower-stalks), large, with white, undulated *petals*, scentless. *Calyx* (see fig. 1, *a.*) with long, narrow, downy, permanent segments (see fig. 3). *Styles* (see fig. 1, *c.*) 5, club-shaped, encompassed at the base with an elevated ring arising from the *floral receptacle*. *Fruit* (fig. 3.) depressed, concave at the top, fleshy; reddish-brown, somewhat hairy, containing 5 gibbous, wrinkled, 1-celled stones, in each of which are 2 *seeds*, but one is usually abortive; pulp thick, mixed with callose granules (see fig. 4).

This is a tree of very unequal, often humble and deformed, growth. It is a native of Europe and Siberia, in woods and among bushes, and in a wild state it is furnished with shining thorns, which disappear by culture. Several varieties are cultivated in gardens for the sake of the fruit, which, when firm and sound, is of a singularly austere disagreeable taste; but having lain some time after being gathered, till it assumes a state of decay, and becomes soft, it aquires a flavour extremely agreeable to many, though to others altogether unpalatable. *Medlars* should be gathered towards the end of October, or the beginning of November, when some should be laid in moist bran, (in several layers,) to forward their decay; others on straw in the fruitery; those in the bran will begin to be ready for use in about a ortnight, and those laid on straw will come gradually forward in succession.—*Encyclop. Brit.*

I have, some seasons, observed *Æcidium laceratum* (a parasitic fungus) to be very abundant on the leaves of the Medlar-tree in the vicinity of Oxford.

The drawing for the accompanying plate was made from garden specimens, for which I am indebted to Mr. B. Robinson; and Mr. Quarterman, Gardener, at the Radcliffe Observatory. The fruit of the wild variety is described as being small, dry, and worthless.



Limbarda tricuspis Golden Samphire ♃

Mathews Del & Sc
Pub. by W. Baxter Botanic Garden Oxford 1840

LIMBA'RDA*.

Linnean Class & Order. SYNGENE'SIA†, POLYGA'MIA, SUPE'RFLUA‡.

Natural Order. COMPO'SITÆ§, tribe, CORYMBI'FERÆ‖. *Juss.*—Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 and 199.—Mack. Fl. Hibern. p. 142.—Hook. Brit. Fl. (4th edit.) p. 410.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBIFERÆ, Rich. by Macgilliv. pp. 454 & 455.—CORYMBIFERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 and 123.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type, ASTERACEÆ, Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 926.—COMPO'SITÆ, *Linn.*

GEN. CHAR. *Involucrum (common calyx)* (fig. 1.) imbricated; scales narrow, simple, without any appendage. *Corolla* compound, radiant; *florets* of the disk (fig. 4.) numerous, perfect, tubular, with 5 equal segments; *florets* of the ray (fig. 2.) strap-shaped, 3-toothed, yellow. *Filaments* (see fig. 5.) 5, in the florets of the disk only, thread-shaped. *Anthers* united into a cylindrical tube, with bristles at their base (see figs. 5 & 6). *Germen* (see fig. 4.) in all the florets fertile, oblong. *Style* (see figs. 2 to 5.) thread-shaped, cloven. *Stigmas* spreading, oblong, rather blunt. *Seed-vessel* none, but the unaltered involucrum. *Seed* linear, quadrangular. *Pappus* (see figs. 2 to 5, & fig. 8.) simple, rough. *Receptacle* (see figs. 7 & 9.) naked.

The imbricated *involucrum* of many narrow, simple scales; the *anthers* with 2 bristles at their base; the naked *receptacle;* and simple, rough *pappus;* will distinguish this from other genera, with radiant flowers, in the same class and order.

The narrow simple scales of the involucrum will distinguish it from *I'nula*, t. 265.; and the simple pappus from *Pulicária*, t. 170.

One species British.

LIMBA'RDA TRICU'SPIS. Three-pointed Limbarda. Golden Samphire. Samphire-leaved Flea-bane.

SPEC. CHAR. Leaves strap-shaped, fleshy, generally 3-toothed at the extremity.

LIMBA'RDA TRICU'SPIS, *Cassini.*—Lindl. Syn. p 143.—*Limbárda crithmoídes*, Hook. Brit. Fl. p. 363.—Mack. Fl. Hibern. p. 143.—Irv. Lond. Fl. p. 275.—*I'nula crithmoídes*, Engl. Bot. t. 68.—Linn. Sp. Pl. p. 1240.—Huds. Fl. Angl. (2nd ed.) p. 369.—Sm. Fl. Brit. v. ii. p. 893.; Engl. Fl. v. iii. p. 442.—With. (7th ed.) v. iii. p. 946.—Hook. Brit. Fl. 4th ed. p. 306; 5th ed. p. 197.—Macr. Man Brit. Bot. p. 124.—Davies' Welsh Bot. p. 79.—Hook. Fl. Scot. p. 245.—Bab. Prim. Fl. Sarn. p. 50.—*I'nula crithmifólia*, Linn. Syst. Veg. 13th ed. p. 638; 15th ed. p. 809.—Willd. Sp. Pl. v. iii. pt. III. p. 2101.—With. (2nd edit.) v. ii. p. 924.—Lightf. Fl.

Fig. 1. Involucrum.—Fig. 2. A Floret of the Ray of the Corolla.—Fig. 3. Down and Pistil of ditto.—Fig. 4. A Floret of the Disk.—Fig. 5. Stamens and Pistil of ditto.—Fig. 6. A single Stamen.—Fig. 7. A vertical section of a Flower, showing the situation of the Florets on the Receptacle.—Fig. 8. A single Ray of the Pappus.—Fig. 9. A small portion of the Receptacle.—Figs. 4, 5, 6, & 8, *magnified.*

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* Named from *Limbarde*, as the plant is called in some parts of France. HOOKER.

† See fol. 91, n. †. ‡ See fol. 36, n. ‡. § See fol. 27, *a*. ‖ See fol. 36, *a*.

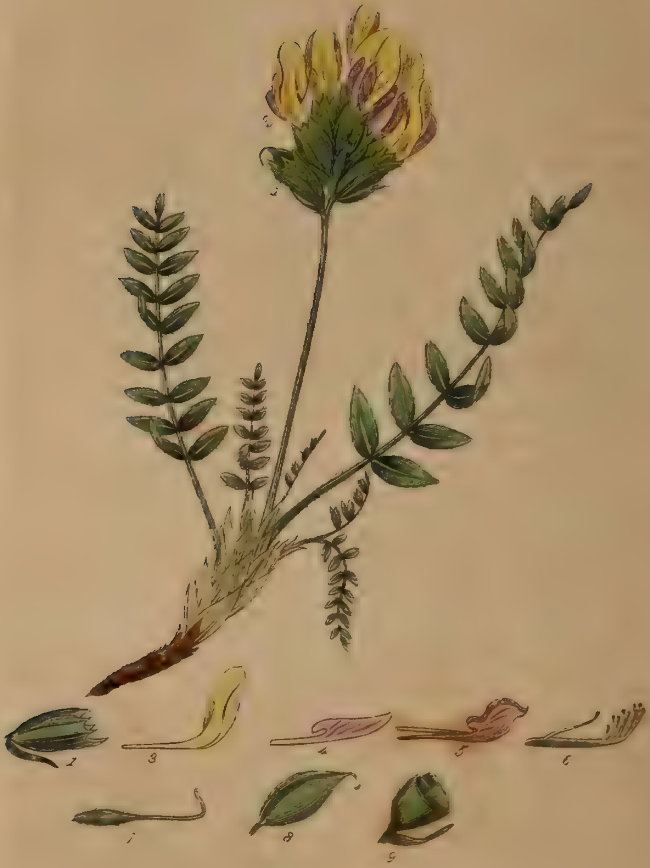
Scot. v. ii. p. 1107.—Pers. Syn. Plant. v. ii. p. 451.—Loud. Encycl. of Gard. (new edit.) p. 881. paragr. 4687. f. 742, *b.*—*Eritheis maritima*, Gray's Nat. Arr. v. ii. p. 464.—*Aster maritimus flavus. Crithmum chrysanthemum dictus*, Ray's Syn. p. 174.—Jacob's Plant. Faversh. p. 9.—*Aster littoreus luteus, folio angusto spisso, ad extremitatem trifido*, Moris. v. iii. p. 119. sect. 7. t. 21. f. 16.—*Aster flore terminatrici, foliis linearibus tricuspidates*, Linn. Hort. Cliff. p. 409.—*Crithmum chrysanthemum*, Johnson's Gerarde, p. 533. f 3.—Park. Theatr. Bot. p. 1287. f. 4.—*Golden Samphire*, Petiv. H. Brit. t. 17. f. 9.

Localities.—In salt-marshes on the sea-coast, in muddy soil, chiefly in the South; rare.—*Cornwall;* On the Cornish coast, but sparingly: F. Borone.—*Dorsetsh.* Portland Island: Rev. Mr. Baker. About Weymouth; about Poole; in Purbeck; on the cliffs at Tineham: Dr. Pulteney. Chesil Bank: Dr. Maton.—*Essex;* On the bank of the river just above Fulbridge at Maldon: Ray. Walton: W. Christy, in N. B. G.—*Hants;* In the marsh near Hurst Castle, over against the Isle of Wight, plentifully: Ray. Near the river at East Cowes: (S. Hailstone, Esq.) Dr. Bromfield, in N. B. G.—*Kent;* Near Sheerness, in the Isle of Shepey: Mr. J. Sherard; Ray.—*Norfolk;* A single specimen, in 1784, on the Caistor Marrams: *Hist. Yarm.* N. B. G.—*Somersetsh.* Steep Holmes: J. C. Collins, in N. B. G.—*Suffolk;* On the sea-coast of the county: *Gough's Camden.*—WALES. *Anglesea;* On sea rocks, particularly S. W. coast; Llanddwyn, &c., rarely attainable without climbing. Rev. H. Davies. Rocks on the S. W. coast, between Aberffraw and Holyhead: J. E. Bowman, in N. B. G.—*Glamorgansh.* Plentiful about Port Eynon: Dr. Turton. Less plentiful in several places between Port Eynon and Swansea: L. W. Dillwyn, Esq.—*Pembrokesh.* In the rocks W. from St. Gowen's: Mr. Milne.—SCOTLAND. *Kirkcudbrightsh.* Arbigland, in the county of Galloway: Dr. Burgess.—*Wigtonsh.* At West Torbet, and near the point of Mull, on the W. side: G. Macnab, in N. B. G. Mull-Head of Galloway, with *Inula dysenterica:* Mr. Maughan.—IRELAND. Sea-shore on the south side of the Hill of Howth, in muddy places; on steep banks, and in crevices of rocks, below the Rev. Dr. Mac Donnell's cottage, on the S. side of Killiney Hill, and on Lambay Island, abundant: *Fl. Hibern.*—Near Coolum in the county of Waterford: Countess of Carrick, 1837.

Perennial.—Flowers in August and September.

Root creeping. *Stem* about a foot high, upright, sometimes decumbent, firm, cylindrical, smooth, striated, leafy, nearly filled with pith, a little branched at the summit. *Leaves* numerous, crowded, sessile, strap-shaped, smooth, very fleshy, generally with three blunt teeth at the end. *Flowers* few, solitary, terminating the stem and upper branches, their stalks thick, and clothed with awl-shaped bracteas. *Involucrum* of numerous smooth, flat, awl-shaped, fleshy scales. *Corolla* rather large and showy; *disk* orange-coloured; *rays* spreading, of a golden yellow. *Seeds* woolly. *Pappus* rough.

As well as of Britain this plant is also a native of France, Spain, Portugal, the coasts of the Mediterranean Sea, Barbary, &c., and Arabia; in salt-marshes. It is occasionally gathered and brought to Covent Garden market, under the name of *Golden Samphire*, and is used for the same purposes as the common samphire, (*Crithmum maritimum*, t. 267), but it has none of the warm aromatic taste of that plant.



Oxytropis campestris. Mountain Oxytropis.

Mattes lith. Pub.d by W. Baxter Botanic Garden Oxford.

OXY'TROPIS *.

Linnean Class and Order. DIADE'LPHIA †, DECA'NDRIA.

Natural Order. LEGUMINO'SÆ, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75.; Introd. to Nat. Syst. of Bot. p. 87.—Rich. by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 91.—Mack. Fl. Hibern. p. 73.—Hook. Brit. Fl. (4th edit.) p. 404.—LEGUMINA'CEÆ, Loud. Arb. Brit. p. 561.—PAPILIONA'CEÆ ‡, *Linn.*—ROSALES; sect. CICERINÆ; subsect. LOTIANÆ; type, LOTACEÆ; subtype, LOTIDÆ; Burn. Out. of Bot. pp. 614, 638, 642, & 644.

GEN. CHAR. *Calyx* (fig. 1.) inferior, tubular, permanent, with 5 acute teeth, the lower ones gradually longest. *Corolla* (see fig. 2.) papilionaceous, of 5 petals; standard (fig. 3.) egg-shaped, blunt, upright, longer than the rest; wings (fig. 4.) oblong, somewhat half egg-shaped, shorter than the standard; keel (fig. 5.) as long as the wings, pointed in front, of 2 united petals, with separate claws. *Filaments* (see fig. 6.) 10; 9 united in one compressed tube, open above; the tenth hair-like, usually shorter, quite separate. *Anthers* roundish. *Germen* (fig. 7.) oblong, compressed. *Style* (see fig. 7.) awl-shaped, ascending, smooth. *Stigma* blunt. *Legume* (see fig. 8.) variously shaped, more or less tumid, of 2 longitudinal cells (see fig. 9.); the partition double, more or less complete, from the upper suture being turned inwards. *Seed* one or more, kidney-shaped.

The *pointed* keel of the *corolla;* the awl-shaped, smooth *style;* the blunt *stigma;* and the 2-celled, or partially 2-celled, *legume,* with the margins of the upper suture turned inwards; will distinguish this from other genera in the same class and order.—It differs from *Astrágalus,* t. 453, in the keel of the corolla being *pointed,* not *blunt;* and in the *upper* suture of the legume, not the *under,* being inflexed.

Two species British.

OXY'TROPIS CAMPE'STRIS. Field Axe-vetch. Mountain Milk-vetch. Cream-coloured Milk-vetch.

SPEC. CHAR. Plant stemless, somewhat silky. Leaflets many pairs, spear-shaped, acute, hoary, or rather hairy. Scape ascending, about the same length as the leaves. Flowers cream-coloured. Legumes upright, egg-shaped, inflated, hairy, half 2-celled.

OXY'TROPIS CAMPE'STRIS, Decand. Astr. n. 10., Prod. v. ii. p. 278.—Gray's Nat. Arr. v. ii. p. 608.—Lindl. Syn. p. 79.—Hook. Brit. Fl. p. 325.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 251.—Macr. Man. Brit. Bot. p. 56.—Irv. Lond. Fl. p. 268.—*Astragalus campestris,* Linn. Sp. Pl. p. 1072.—Engl. Bot. t. 2522.—

Fig. 1. Calyx, and a Bractea.—Fig. 2. Corolla.—Fig. 3. Standard.—Fig. 4. A Wing.—Fig. 5. Keel.—Fig. 6. Stamens.—Fig, 7. Germen, Style, and Stigma.—Fig. 8. Legume.—Fig. 9. Transverse section of the same, showing the inflexed upper suture.—*All very slightly enlarged.*

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[*] From *oxys,* Gr. *sharp;* and *tropis,* Gr. a *keel;* in reference to the keel of the corolla ending in an exserted sharp point on the back at the apex, one of the essential characters of this Genus, as distinguishing it from that of *Astragalus,* t. 453.

[†] See fol, 77, note †.

[‡] See fol. 117, note ‡.

Willd. Sp. Pl. v. iii. pt. II. p. 1317.—Sm. Engl. Fl. v. iii. p. 296.—With. (7th ed.) v. iii. p. 851.—Hook. Fl. Scot. p. 217.—*A. sordidus*, Willd. Sp. Pl. v. iii. pt. II. p. 1313, with erroneous remarks.—*A. uralensis*, Fl. Dan. t. 1041.—*Astragalus acaulos, foliis peracutis, calyce et fructu villoso*, Hall. Hist. Helv. p. 567. t. 13.

Localities.—On highland rocks in Scotland; very rare.—*Forfarshire;* On a rock on one of the mountains at the head of Clova, near the White Water, in great abundance: Mr. G. Don. Rocks on the left side of Glen Dole (towards Glen Phu?), almost facing a person when turning from Glen Clova to Glen Dole: Mr. H. C. Watson, in N. B. G.

Perennial.—Flowers in July.

Root woody, long, and slender. *Stem* none. *Leaves* all radical, pinnate, stalked; leaflets numerous, from 8 to 12 pairs, with an odd terminal one, all uniform, elliptic-spear-shaped, pointed, entire, usually besprinkled with silky shining hairs, but sometimes quite smooth, except the mid-rib. *Stipulas* large, egg-shaped, pointed, simple, entire, membranous, veiny, hairy at their margins, united in pairs to the base of each *petiole*. *Scape (flower-stalk)* hairy, about equal in length to the leaves, ascending, sometimes decumbent, bearing from about 8 to 12 flowers in a close, oblong, or somewhat egg-shaped, spike, or head; each flower accompanied by a spear-shaped, hairy, somewhat membranous *bractea* at its base (see figs. 1 & 9). *Calyx* (see fig. 1.) tubular, longer than its accompanying bractea, clothed with dense, close, black as well as white hairs, its teeth short, and sometimes tipped with brown. *Corolla* (see fig. 2.) cream-coloured, or buff; the *keel* (fig. 5.) and *wings* (fig. 4.) tinged with purple. *Legume* (fig. 8.) somewhat egg-shaped, inflated, with a straight point, covered, like the calyx, with short, spreading, black as well as white hairs.

An elegant little plant, growing from 3 to 6 inches high. It is a native of Europe, on the Alps, but was not known as a native of Britain until Mr. G. Don discovered it, in the Summer of 1812, in great abundance, in the locality recorded above.

The *Natural Order* Leguminosæ is composed of dicotyledonous *trees*, *shrubs*, or *herbaceous* plants. Their *leaves* are alternate, mostly compound and pinnated, with a pair of *stipulæ* at the base of each petiole. The *flowers* are either axillary or terminal, and are disposed in racemes or panicles, rarely solitary. The *calyx* is inferior, either tubular and 5-toothed, or more or less deeply cut into 5 unequal segments. The *corolla* consists of 5 petals, or by abortion of only 4, 3, 2, 1, or none, inserted into the base of the calyx, and is either papilionaceous or regularly spreading; the odd petal (fig. 3.) posterior. The *stamens* (fig. 6.) are various, usually 10, and are either distinct, or monadelphous, or diadelphous. The *ovary* (fig. 7.) is simple, superior, 1-celled, and 1- or many-seeded. The *style* is simple and thread-shaped, proceeding from the top of the upper suture of the ovary, and crowned by a terminal or lateral *stigma*. The *legume* (figs. 8 & 9.) is usually 2-valved, membranous, coriaceous, rarely fleshy or drupaceous, dehiscent or indehiscent. The *seeds* are attached to the upper suture of the legume, and are either solitary or several, usually oval, or kidney-shaped, and hang by various shaped funicles (little stalks), which sometimes, though rarely, expand into an arillus; *embryo* either straight or with the radicle bent upon the cotyledons; *albumen* none; *cotyledons* either remaining under ground in germination, or elevated above the ground, and becoming green like leaves.

The British Genera in this order are—*U'lex*, t. 93.—*Genísta*, t. 84.—*Spártium* (*Cy'tisus*, Hook.), t. 77.—*Onónis*, t. 289.—*Anthy'llis*, t. 397.—*Medicágo*, t. 329.—*Melilótus*, t. 363.—*Trifólium*, t. 283.—*Lótus*, t. 249.—*Oxy'tropis*, t. 495.—*Astrágalus*, t. 453.—*Orníthopus*, t. 358.—*Hippocrépis*, t. 369.—*Onóbrychis*, t. 134.—*Vícia*, t. 173.—*E'rvum*, t. 322.—*Láthyrus*, t. 117.—*Pisum*, t. 225.—*O'robus*, t. 433.

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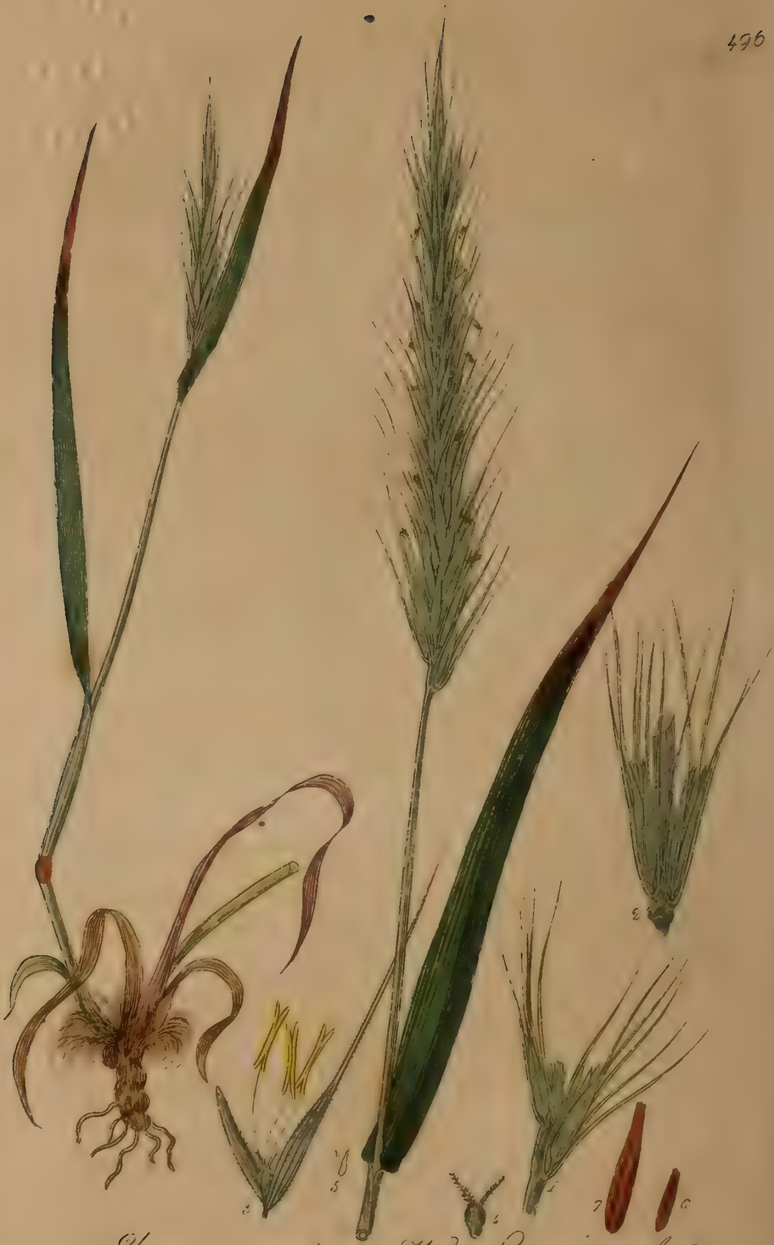

Elymus europaeus Wood Lyme-grass ♃

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E'LYMUS *.

Linnean Class and Order. TRIA'NDRIA †, DIGY'NIA.

Natural Order. GRAMI'NEÆ ‡, Juss. Gen. Pl. p. 28.—Sm. Gr. of Bot. p. 86.; Engl. Fl. v. i. p. 71.—Lindl. Syn. p. 293.; Introd. to Nat. Syst. of Bot. p. 292.—Loud. Hort. Brit. p. 542.—Mack. Fl. Hibern. p. 294.—Hook. Brit. Fl. (4th ed.) p. 426.—GRAMINA, *Linn.*—Rich. by Macgilliv. p. 393.—GRAMINALES; sect. TRITICINÆ; type, HORDEACEÆ; Burn. Outl. of Bot. v. i. pp. 359 and 362.

GEN. CHAR. *Inflorescence* spiked; *spikes* imbricated. *Rachis (common receptacle)* many-flowered, continuous, elongated, toothed alternately, at each side, and flattened just above. *Spikelets* (figs. 1 & 2.) 2 or 3 at each tooth of the rachis, parallel, 2- or 3-flowered, all perfect. *Calyx* (see figs. 2 & 3.) of 2 unequal, upright, strap-spear-shaped, or awl-shaped, pointed or awned, more or less keeled glumes, both on one side of the spikelet. *Corolla* (fig. 3.) of 2, unequal, egg-spear-shaped paleæ; the outermost largest, keeled, ribbed, pointed or awned; the awn straight and terminal; inner palea flat, cloven, inflexed at the edges, with a rib at each side. *Nectary* (fig. 5.) of 2 spear-shaped scales. *Filaments* (see fig. 3.) 3, hair-like, shorter than the corolla. *Anthers* strap-shaped, notched at each end. *Germen* (fig. 4.) turbinate. *Styles* (see fig. 4.) 2, distant, very short. *Stigmas* feathery, spreading. *Seed* (figs. 6 & 7.) strap-shaped, or spear-shaped, channelled along the upper side, very hairy at the summit, more or less attached to the unchanged paleæ of the *corolla*.

The 2- or many-flowered *spikelets*, 2 or 3 together at each tooth of the rachis; and the *calyx* of 2 parallel glumes, 2- or 3-flowered, *all* perfect; will distinguish this from other genera, with a spiked inflorescence, in the same class and order.

Three species British.

E'LYMUS EUROPÆ'US. European Lyme-grass. Wood Lyme-grass. Wood Barley-grass. Great Wood Rye-grass.

SPEC. CHAR. Leaves flat, pliant. Spike upright, compact, smooth. Spikelets ternate, 1- or 2-flowered. Calyx-glumes bristle-like. Florets terminated by a long awn.

Engl. Bot. t. 1317.—Host. Gram. Austr. v. i. p. 22. t. 28.—Linn. Mant. p. 35; Syst. Veg. (13th ed.) p. 107.—Willd. Sp. Pl. v. i. pt. I. p. 470.—Sm. Fl. Brit. v. i. p. 154.; Engl. Fl. v. i. p. 178—With. (7th ed.) v. ii. p. 202.—Gray's Nat. Arr. v. ii. p. 92.—Lindl. Syn. p. 297.—Hook. Brit. Fl. p. 53.—Macr. Man. Brit Bot. p. 275.—Sibth. Fl. Oxon. p. 51.—Schrad. Fl. Germ. v. i. p. 402.—Winch's Fl. of Northumb. and Durh. p. 8.—Walker's Fl. of Oxf. p. 32.—Irv. Lond Fl. p. 101.—Baines' Fl. of Yorksh. p. 117.—*Hordeum sylvaticum*, Huds. Fl. Angl. (2nd ed.) p. 57.—Mart. Fl. Rust. t. 45.—Knapp's Gram. Brit. t. 107.—Abbot's Fl. Bedf. p.

Figs. 1 & 2. Spikelets, with a portion of the rachis.—Fig. 3. A separafe Floret.—Fig. 4. Germen, Styles, and Stigmas.—Fig. 5. Nectary.—Figs. 6 & 7. Seeds.—*All, more or less, magnified.*

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* From *elumos*; a name given by the Greeks to the *Panic-grass*, perhaps because they grew abundantly about *Elyma* in Greece.

† See folio 56, note †. ‡ See folio 488, *a*.

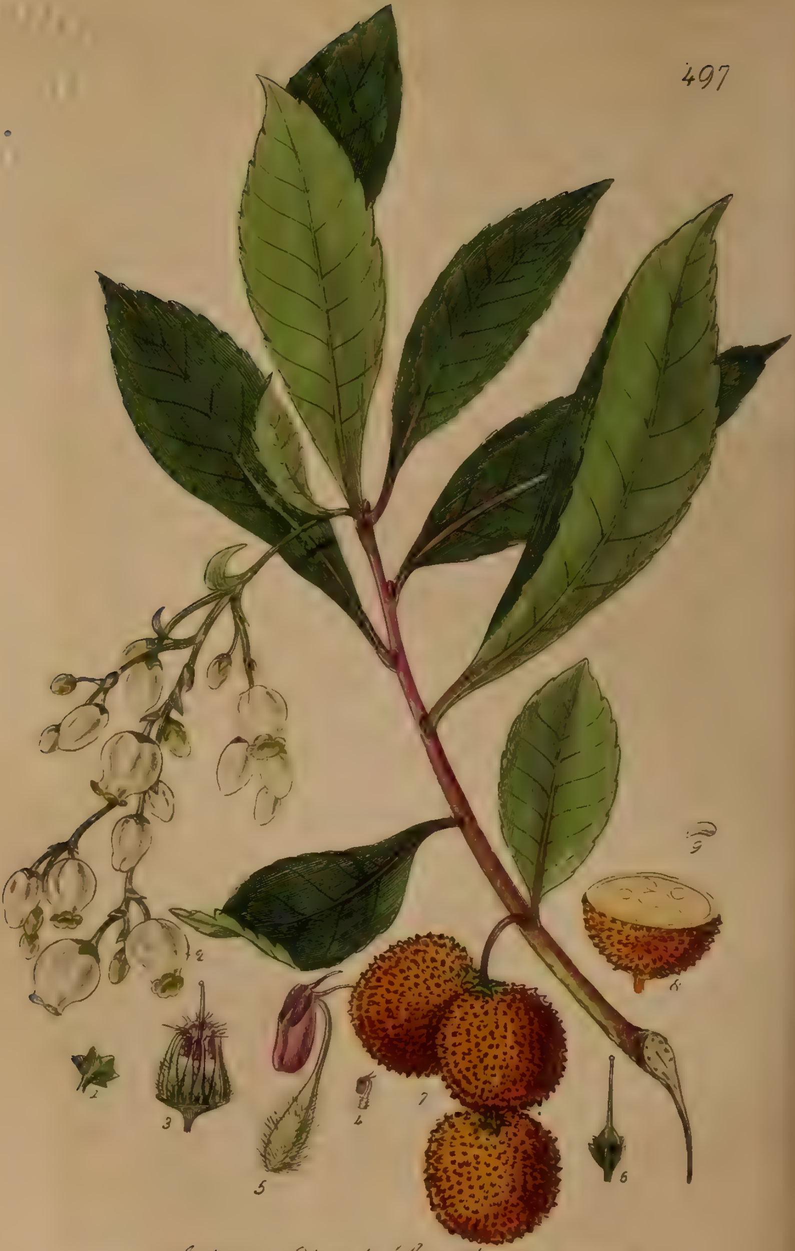
27.—*Triticum sylvaticum*, Salb. Prod. p. 27.—*Gramen secalinum majus sylvaticum*, Moris. Hist. Oxon. v. iii. p. 180. n. 12.—Ray's Syn. p. 392.—*Gramen secalinum maximum*, Merr. Pin p. 57.—*Gramen hordeaceum montanum, spicâ strigosiori brevius aristata*, Scheuchz. Agr. p. 16.; Prod. p. 14. t. 1.

Localities.—In woods and hedges, on a chalky soil.—*Oxfordshire;* In Stokenchurch Woods, plentifully: Bobart. In the same locality now: W. B. Ardley: Dr. Sibthorp.—*Berks;* Woods between Maidenhead and Great Marlow: N. J. Winch, Esq. Not rare in the county: *Engl. Fl.*—*Bedfordsh.* Thurleigh; and Putnoe Woods: Rev. C. Abbot.—*Bucks;* Marlow Wood: Mr. Gotobed.—*Derbysh.* Rocks opposite Matlock Baths: Mr. Woodward.—*Durham;* On the east bank of Wescrow Bourn, four miles N. of Wolsingham; and between Rushyford and Ferry Hill: N. J. Winch, Esq. Banks of the Tees near Egglestone Abbey: N. B. G.—*Hants;* In the woods a mile W. from Petersfield: Merrett, 1666. Chawton Park, near Alton: Mr. J. Woods, jun.—*Herts;* Near Berkhamstead: Dr. Withering.—*Hunts;* Ripon Wood: Mr. Woodward. In a wood on the right hand side of the road leading towards the north beyond the wheat-sheaf Inn, Alconbury Hill: Rev. R. Relhan.—*Kent;* In a salt-marsh near Gravesend: Mr. Dickson.—*Northumberland;* In Ramshaw Wood; and Scotswood Dean: N. J. Winch. Esq.—In *Nottinghamshire;* T. H. Cooper, Esq. in N. B. G.—*Wilts;* In the high woods by Hambleton, in the road from Henley to Great Marlborough: Mr. J. Sherard, in *Ray's Syn.*—*Yorksh.* In the woods at Rokeby. Very common in Cave Hole Wood, near Settle. In the Eavs at Heptonstall. Stanley Clough, near Totmaden. In a wood by the side of the Huddersfield Canal. In a wood belonging to the Wade House Farm, at Shelf, near Bradford; Old Park Wood, near Sheffield; Thorp Arch Woods; Woods at Castle Howard; Byland, near Coxwold; Hackfall; Hildenley Wood, near Malton: Baines' *Fl. of Yorkshire.*—WALES. *Denbighsh.* Gain Dingle, under Garreg Wen Rocks: Mr. Griffith. It appears not to have been found either in Scotland, or Ireland.

Perennial.—Flowers in June.

Root fibrous, tufted. *Culm (stem)* upright, 2 feet, or more, high, with 4 or 5 joints, simple, cylindrical, striated, smooth, most leafy in the lower part. *Leaves* strap-spear-shaped, many-ribbed, flat, taper-pointed, smooth to appearance, but rough to the touch, especially at the edges. *Sheaths* clothed more or less with deflexed hairs. *Stipula (ligula)* very short, minutely notched. *Spike* narrow, 2 or 3 inches long, simple, upright, close, green; its *rachis* (main *stalk*) angular, furrowed, rough, and zigzag. *Spikelets* three together at each tooth of the rachis. *Calyx-glumes* awl-shaped, very smooth and even at the base; ribbed, angular, and roughish above; each terminated with a straight rough *awn*, half its own length. *Florets* 2, sometimes only 1, in each calyx, all generally perfect. Outer *palea* of the corolla (fig. 3.) spear-shaped, ribbed, rough, especially in the upper part, terminating in a long straight *awn;* inner *palea* slightly cloven, rough at the marginal ribs. *Germen* (fig. 4.) abortive, downy. *Styles* distant, very short. *Stigmas* slender. *Seed* (figs. 6 & 7.) spear-shaped, with a furrow along the upper side, and a downy point, firmly coated with both paleæ. See *Engl. Fl.*

This species is a native of Germany and Switzerland, as well as of England. It has so much the habit of a *Hordeum*, (see t. 344), that Hudson, Martyn, Knapp, and some other Botanists, united it with that genus; and it appears to be the opinion of Sir W. J. Hooker, that it would be much more natural to refer it to the genus *Hordeum* than to that of *Elymus*. Dr. Stokes considered it the connecting link between the two genera. In an agricultural point of view it is of no value, it being a coarse grass, like most other species which grow in woods; and like them it is sometimes drawn up to a great height.



Arbutus Unedo. Strawberry-tree. ♄

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Pub.d by W. Baxter Botanic Garden, Oxford 1843

A′RBUTUS *.

Linnean Class and Order. DECA′NDRIA †, MONOGY′NIA.

Natural Order. ERI′CEÆ ‡, *Brown's* Prod. p. 557.—Lindl. Syn. p. 172; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 170.—Hook. Brit. Fl. (4th ed.) p. 411.—ERICA′CEÆ; subtribe, ANDROME′DEÆ, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 and 787.—Loud. Arb. et Frutic. Brit. pp. 1076 and 1077.—ERICINEÆ, Rich. by Macgilliv. p. 450.—ERICÆ, Juss. Gen. Pl. p. 159.—Sm. Gram. of Bot. p. 115.—SYRINGALES; subord. ERICOSÆ; sect. ERICINÆ; type, ERICACEÆ; subtype, ERICIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—BICORNES, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, in 5 blunt segments, permanent. *Corolla* (fig. 2.) of 1 petal, globose, or egg-shaped, flattened and transparent at the base; its limb in 5 small, recurved, bluntish segments. *Filaments* (see figs. 3, 4, & 5.) 10, slightly attached to the base of the corolla, and about half its length, awl-shaped, swollen and hairy on the lower part. *Anthers* compressed on the sides, bursting by 2 pores at the apex, fixed by the back beneath the apex, where they are furnished with a pair of reflexed awns, or spurs. *Germen* (see fig. 6.) superior, roundish, seated on an orbicular disk, or half immersed in it. *Style* (see fig. 6.) 1, terminal, cylindrical, upright, the length of the corolla. *Stigma* blunt. *Berry* (see figs. 7 & 8.) nearly globular, granular, fleshy, 5-celled, many-seeded.

The 5-parted *calyx;* the globose, or egg-shaped *corolla*, with a small, 5-cleft, revolute limb; the hairy *filaments;* the *anthers* with 2 pores at the apex; and the fleshy, granular, 5-celled, many-seeded *berry;* will distinguish this from other genera in the same class and order.—It differs from *Arctostaphylos* in the berry being granulated, not smooth.

One species British.

A′RBUTUS U′NEDO. Unedo Arbutus. Common Strawberry-tree. Arbute

SPEC. CHAR. Stem arboreous. Branchlets clothed with glandular hairs. Leaves oblong-spear-shaped, smooth, serrulated. Flower nodding. Peduncles smooth.

Engl. Bot. t 2377.—Fl. Græc. t. 373.—Linn. Sp. Pl. p. 566.—Huds. Fl. Angl. (2nd ed.) p. 177.—Willd. Sp. Pl. v. ii. pt. I. p. 616.—Sm. Fl. Brit. v. ii. p. 442.; Engl. Fl. v. ii. p. 252.—With. (7th ed.) v. ii. p. 521.—Lindl. Syn. p. 174.—Hook. Brit. Fl. p. 188.—Macr. Man. Brit. Bot. p. 150.—Pers. Syn. Pl. v. i. p. 482.—De Cand. Fl. Fr. v. iii. p. 682.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 834.—Loud. Arb. et Frutic. Brit. v. ii. p. 1117. f. 919.; Encycl. of Tr. and Shr. p. 573. f. 1077.—Hunt. Evel. Silva. p. 373, with a plate.—Phil. Syl. Fl. v. i. p. 69.—Irv. Lond. Fl. p. 245.—Mack. Catal. Pl. Irel. p. 39.; Fl. Hibern. p. 182.—*Arbutus serratifólia*, Salisb. Prod. p. 288.—Gray's Nat. Arr. v. ii. p. 400.—*Arbutus*, Ray's Syn. p. 464.—Johns. Ger. p. 1496, with a figure.—Bauh. Hist. v. i. pt. I. p. 83. with a figure.—*Arbutus folio serrato*, Bauh. Pin. p. 460.—Mill. Icon. p. 32. t. 48. f. 2.

Fig. 1. Calyx.—Fig. 2. Corolla.—Figs. 3, 4, & 5. Stamens.—Fig. 6. Calyx and Pistil.—Fig. 7. Fruit.—Fig. 8. Section of a Berry.—Fig. 9. A Seed.

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* From *ar, rough,* or *austere;* and *boise,* a *bush,* in Celtic.

† See fol. 37, note †. ‡ See folio 449, *a*.

Localities.—On limestone rocks in Ireland.—Plentiful in the woods of Mucruss and in all the islands in the lower and upper lakes of Killarney, as well as at Glengariff, near Bantry, generally among limestone rocks. About most of the mountain lakes in the barony of Beer, certainly indigenous: *Fl. Hibern.*

Tree.—Flowers from September to December.

A bushy tree, growing to the height of 20 or 30 feet; its main *stem*, and older branches, covered with a reddish-brown *bark*, the outer layers of which come off in thin flakes. Young shoots often red, and rough with glandular hairs. *Leaves* alternate, evergreen, simple, elliptic-spear-shaped, unequally serrated, bright green, veiny, rigid, on hairy *petioles*, without *stipulas*. *Racemes* (*clusters*) panicled, bent downwards, smooth. *Bracteas* oblong, recurved, one at the base of each partial flower-stalk. *Flowers* very elegant, of a greenish, semi-transparent white, with a shade of red, a little hairy within, destitute of scent. *Anthers* (see fig. 5.) scarlet. *Berry* (see fig. 7.) crimson, about the size of a cherry, and covered with hard tubercles, which give it very much the appearance of a Strawberry, but the seeds are internal.

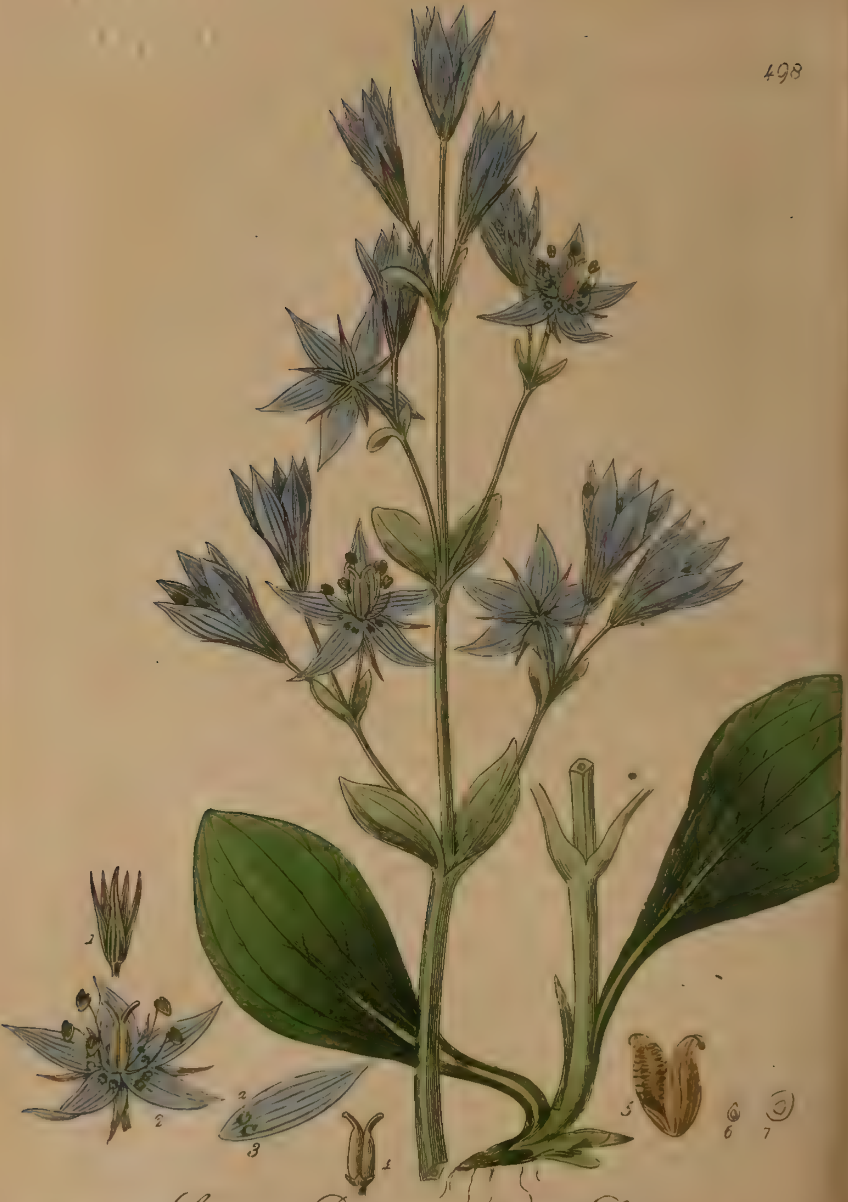
This very beautiful, evergreen tree, is a native of the south of Europe, also of various parts of Asia, and of Africa, about Mount Atlas and Algiers; and it is particularly abundant in Italy, in the woods of the Appennines. Some consider it as a doubtful native of Ireland, and suppose it to have been introduced there; while others are of opinion "that it is truly an aboriginal native of that country." It is one of the greatest ornaments in the months of October and November, that being the season when it is in flower, and the fruit of the former year is ripe, it taking twelve months to come to maturity; so that, as Mr. Salisbury remarks, this plant exhibits simultaneously, and during the depth of Winter, the singular phenomenon of lively green leaves, beautiful flowers, and brilliant fruit, thus affording a fit emblem of that perpetual Spring which, in original perfection, pervaded the whole earth, when

> "Green all the year; and fruits and blossoms blush'd,
> In social sweetness, on the self-same bough."

The amiable authoress of that very elegant and pleasing work, "The Spirit of the Woods," in her description of the *Arbutus*, alludes to the same fact in the following lines:—

> "Mark upon this lovely bough
> How in social beauty grow
> Flowers and fruit, a fairy throng,
> Fitting theme for poet's song;
> Sure not brighter wreaths than this
> Graced the famed Hesperides.
> Yet a lovelier sight I know;
> (Ay, then read'st my riddle now)
> 'Tis,—when in the social bower
> Wisdom's fruit, and youth's fair flower,
> (Combination rare as sweet)
> On the self-same scion meet."

The fruit is said to have constituted part of the food of mankind in the early ages. That it was not in any esteem among the ancients, we may suppose from its name *Unedo*, which, according to Pliny, is formed from *unum edo*, I eat one; because it is unpalatable, and few people would try a second: nevertheless it is eaten in Italy, and also in Ireland; and in Spain they extract both a sugar and a spirit from it. The leaves may be usefully employed in tanning leather. Virgil alludes to the young branches as Winter food for goats, and to its use for making baskets, &c. About Killarney, in Ireland, where this tree is abundant, boxes, chess-men, &c., are made from the wood, and generally purchased by visitors as memorials of the place.



Swertia Perennis. Marsh Felwort. ♃

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SWE'RTIA *.

Linnean Class and Order. PENTA'NDRIA †, DIGY'NIA.

Natural Order. GENTIA'NEÆ ‡, *Dr. R. Brown.*—Lindl. Syn. p. 177.; Introd. to Nat. Syst. of Bot. p. 215.—Rich. by Macgilliv. p. 444.—Loud. Hort. Brit. p. 526.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 173.—Mack. Fl. Hibern. p. 185.—Hook. Brit. Fl. (4th ed.) p. 413.—GENTIA'NÆ, Juss. Gen. Pl. p. 141.—Sm. Gram. of Bot. p. 106.—SYRINGALES; subord. PRIMULOSÆ; sect. GENTIANINÆ; type, GENTIANACEÆ; Burn. Outl. of Bot. v. ii. p. 900, 958, & 1008.—ROTA'CEÆ, *Linn.*

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, flat, permanent, in 4 or 5 deep, spear-shaped segments. *Corolla* (see fig. 2.) of 1 petal, wheel-shaped; limb nearly flat, in 4 or 5 deep spear-shaped segments, larger than the calyx. *Nectaries* (see fig. 3, *a.*) 8 or 10, consisting of two small depressions, in the base of each segment of the corolla, on the upper side, encompassed with short upright bristles. *Filaments* (see fig. 2.) 4 or 5, awl-shaped, flattened, smooth, dilated at the base, rather spreading, shorter than the corolla. *Anthers* heart-shaped, deflexed, bursting lengthwise. *Germen* (see fig. 4.) superior, egg-oblong, cloven at the summit. *Styles* (see fig. 4.) 2, very short, distant. *Stigmas* blunt. *Capsule* (see fig. 5.) egg-shaped, pointed at each end, of 2 valves, and 1 cell. *Seeds* (see figs. 6 & 7.) numerous, small, roundish, compressed, bordered, attached to the edges of the valves only.

The 4- or 5-parted *calyx;* the wheel-shaped *corolla* with 2 nectariferous glands at the base of each segment; and the 1-celled, 2-valved capsule; will distinguish this from other genera, with an inferior, monopetalous corolla, in the same class and order.

One species British.

SWE'RTIA PERENNIS. Perennial Swertia. Marsh Felwort. Marsh Gentian. Spotted Gentian.

SPEC. CHAR. Plant smooth. Stems upright, and as well as the peduncles 4-sided. Leaves almost all radical, egg-shaped or elliptic, nerved. Racemes panicled, terminal. Segments of the corolla 5, spear-shaped, pointed.

Engl. Bot. t. 1441.—Jacq. Fl. Austr. t. 243.—Linn. Sp Pl. p. 328.—Huds. Fl. Angl. (2nd ed.) p. 102.—Willd. Sp. Pl. v. i. pt. II. p. 1329.—Sm. Fl. Brit. v. i. p. 284.; Engl. Fl. v. ii. p. 26.—With. (7th ed.) v. ii. p. 357.—Gray's Nat. Arr. v. ii p. 339.—Lindl. Syn. p. 179.—Hook. Brit. Fl. p. 110.—Macr. Man. Brit. Bot. p. 156.—Don's Gen. Syst. of Gard. and Bot. v. iv. p. 175.—Irv. Lond. Fl. p. 231.—*Gentiana palustris latifolia, flore punctato,* Bauh. Pin. p. 188.—Moris. v. iii. p. 482. sect. 12. t. 5. f. 11.—*Gentiana duodecima, punctato flore,* Clus, Hist. v. i. p. 316, with a figure.—*Gentiana Pinnæi minor,* Johnson's Gerarde, p. 433. f. 5.—*Allisma Tossani Caroli,* Bauh. Hist. v. iii. p. 519, with a figure.

LOCALITIES.—In watery alpine meadows.—HUDSON records it as having been found wild in Wales by Dr. RICHARDSON, but some mistake is to be suspected, as no person has found it since; and, as Sir J. E. SMITH observes, so fine a plant could scarcely be overlooked.

Fig. 1. Calyx.—Fig. 2. Corolla, &c.—Fig. 3. A segment of the Corolla, *a.* the Nectaries.—Fig. 4. Germen, Styles, and Stigmas.—Fig. 5. Capsule, with the valves separated.—Figs. 6 & 7. Seeds.—Fig. 7, *a little magnified.*

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* So named by LINNÆUS after EMANUEL SWEERT, a cultivator of bulbs and flowers, in Holland; and author of Florilegium, Francof. 1612. folio.

† See fol. 48, note †.

‡ See fol. 400, *a.*

Perennial.—Flowers in August.

Root of many long, cylindrical, whitish fibres. *Stem* upright, a foot or more high, slightly 4-cornered, smooth; leafy and simple below; panicled above. *Leaves* about the base of the stem, opposite, petiolate, egg-shaped or elliptic, quite entire, nerved, smooth, from 2 to 4 inches long, and 1 to 2 inches broad; those on the upper part of the stem much smaller, opposite, sessile, elliptic-oblong, entire. *Panicle* upright, terminal, of about 12, sometimes more, flowers, on opposite angular stalks (pedicles), with a pair of elliptic-oblong, entire *bracteas* at their base. *Calyx* purplish, in 5 awl-shaped segments. *Corolla* (see fig. 2.) about an inch in diameter, of a greyish-purple colour, deeply 5-cleft, its segments elliptic, sharp-pointed, dotted with black, with greenish *nectaries*, which are bristly on the edges (see fig. 3, *a*). *Filaments* (see fig. 4.) 5, awl-shaped. *Anthers* versatile. *Germen* (see fig. 4.) egg-shaped, compressed, often abortive. *Styles* very short. *Capsule* surrounded with the permanent calyx and corolla, egg-oblong, tapering at each end, and shortly 2-beaked at the summit with the spreading stigmas. *Seeds* (see figs. 6 & 7.) numerous, roundish, compressed, with a wide membranous margin, rust-coloured, attached to the thickened margins of the valves in a double row.—Whole *herb* quite smooth, and very bitter.

This plant is a native of Germany, Austria, France, Caucasus, and Siberia; but there is some doubt whether it was ever found wild in Britain. Old authors considered it a *Gentiana*, to which it is very nearly allied, but it differs from that genus (see t. 185.) in the peculiar *nectaries*, and also in the disposition of the seeds.

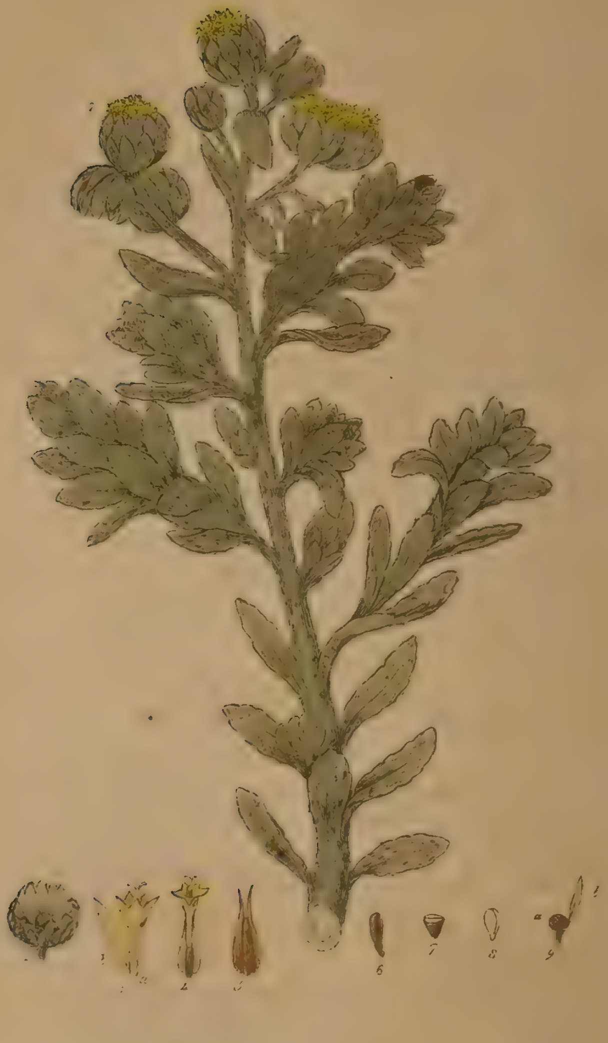
THE WINTER NOSEGAY.

Flowers,—fresh flowers,—with your fragrance free,
Have you come in your queenly robes to me?
Me have you sought, from your fair retreat,
With your greeting lips and your dewy feet,
And the heavenward glance of your radiant eye,
Like angel-guests from a purer sky?

But where did ye hide when the frost came near,
And your many sisters were pale with fear?
Where did ye hide, with a cheek as bright
As gleam'd amid Eden's vales of light,
Ere the wiles of the Tempter its bliss had shamed,
Or the terrible sword o'er its gateway flamed?

Flowers.—sweet flowers,—with your words of cheer,
Thanks to the friend who hath brought you here;
For this may her blossoms of varied dye,
Be the earliest born 'neath the vernal sky;
And she be led by their whisper'd lore
To the love of that land where they fade no more.

Mrs. Sigourney.



Diotis. Maritima. Sea side Cotton-weed. V

Mathews Del & Sc.

Pub.d by W. Baxter Botanic Garden Oxford 1838

DIO'TIS *.

Linnean Class & Order. SYNGENE'SIA †, POLYGA'MIA, ÆQUALIS ‡.

Natural Order. COMPO'SITÆ §, tribe, CORYMBI'FERÆ ||. *Juss.*——Lindl. Syn. pp. 140 & 142.; Introd. to Nat. Syst. of Bot. pp. 197 and 199.—Mack. Fl. Hibern. p. 142.—Hook. Brit. Fl. (4th edit.) p. 410.—COMPO'SITÆ; subord. CARDUA'CEÆ; Loud. Hort. Brit. pp. 520 & 521.—SYNANTHE'REÆ; tribe, CORYMBIFERÆ, Rich. by Macgilliv. pp. 454 & 455.—CORYMBIFERÆ, sect. 2. Juss. Gen. Pl. pp. 177 & 180.—Sm. Gram. of Bot. pp. 121 and 123.—SYRINGALES; subord. ASTEROSÆ; sect. ASTERINÆ; subsect. ASTERIANÆ; type. ASTERACEÆ, Burn. Outl. of Bot. pp. 900, 901, 920, 924, & 926.—COMPO'SITÆ, *Linn.*

GEN. CHAR, *Involucrum (common calyx)* (fig. 1.) hemispherical, imbricated, scales oblong, convex, blunt, unarmed. *Corolla* (fig. 2.) compound, uniform, of numerous, tubular, level-topped, perfect, regular *florets* (see figs. 3 & 4.), about the length of the *involucrum;* their limb in 5 broadish, equal, spreading segments; tube contracted at the summit; elongated at the base on each side, below its insertion, into 2 opposite, compressed, equal, nectariferous *spurs*, which finally separate from the rest of the tube, and remain attached to the Germen. *Filaments* 5, hair-like, very short. *Anthers* in a cylindrical tube, equal to the corolla. *Germen* oblong, slender, between the spurs. *Style* thread-shaped, the length of the floret. *Stigmas* 2, spreading, blunt. *Seed-vessel* none but the unchanged involucrum. *Seed* (see fig. 5.) oblong, compressed, tapering at the base, bordered at each side with the compressed, blunt spurs of the floret. *Pappus* none. *Receptacle* (see fig. 9, *a.*) convex, nearly globular, small, beset with oblong, concave, downy-tipped scales (fig. 9, *b.*) nearly as tall as the florets (see fig. 3, *b*).

The hemispherical, imbricated *involucrum;* the *florets* with two ears at the base, which border the germen and remain upon the fruit; the convex, chaffy *receptacle;* and the want of *pappus;* will distinguish this from other genera with discoid florets, in the same class and order.

Only one species known.

DIO'TIS MARITIMA. Sea-side Cotton-weed. Sea Cudweed. Chaffweed. Petty Cotton.

SPEC. CHAR.

DIOTIS MARITIMA, Hook. Fl. Lond. t. 137.—Sm. Engl. Fl. v. iii. p. 403 —Lindl. Syn. p. 150.—Hook. Brit. Fl. p. 354.—Macr. Man. Brit. Bot. p. 129.—Bab. Prim. Fl. Sarn. p. 51.—Irv. Lond. Fl. p. 274.—*Diotis candidissima*, Desfont. Atlant. v. ii. p. 261.—De Cand. Fl. Fr. v. iv. p. 201.—Gray's Nat. Arr. v. ii. p. 451.—*Santolina maritima*, Huds. Fl. Angl. (2nd ed.) p. 356.—Engl. Bot. t. 141.—Sm.

Fig. 1. Involucrum.—Fig. 2. Corolla.—Fig. 3, *a.* A separate Floret, accompanied by a chaffy Scale of the Receptacle, *b.*—Fig 4. A Floret with its 2 spurs.—Fig. 5. A Seed, with its ear-like appendages.—Fig. 6. A Seed divested of its appendages.—Fig. 7. Transverse section of a Seed.—Fig. 8. Embryo.—Fig. 9. *a*, Receptacle; *b.* one of its chaffy Scales.

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* So named by DESFONTAINES, from *dis*, Gr. *two;* and *ous*, *otos*, Gr. an *ear;* from the ear-like appendages to the fruit.

† See fol. 91, note †. ‡ See fol. 147, note ‡. § See fol. 27, *a.*

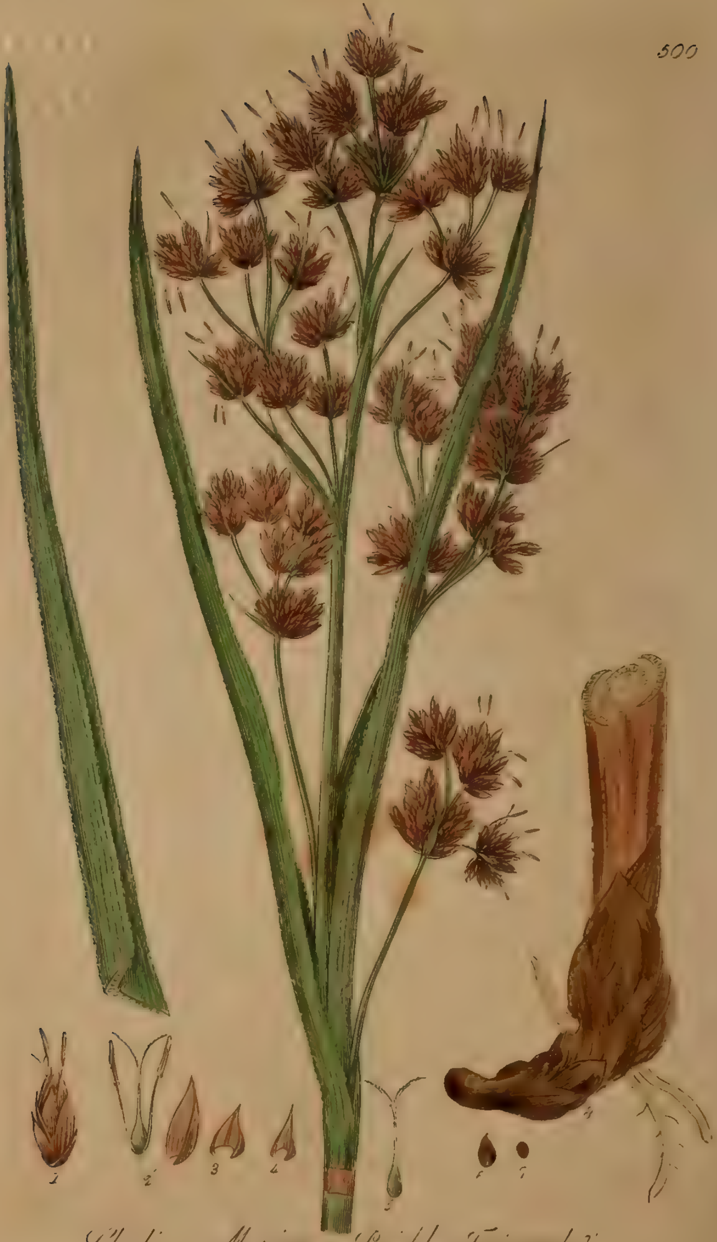
Fl. Brit. v. ii. p. 860.—Willd. Sp. Pl. v. iii. pt. III. p. 1799.—With. (7th ed.) v. iii. p. 920.—Davies' Welsh Bot. p. 76.—Fl. Devon. p. 135.—*Athanasia maritima*, Linn. Sp. Pl. p. 1182.—*Filago maritima*, Linn. Sp. Pl. (1st ed.) p. 927.—Mill. Icon. p. 90. t. 135.—*Gnaphalium maritimum*, Bauh. Pin. p. 263.—Ray's Syn. p. 180.—Bauh. Hist. v. iii. pt. I. p. 157, with a figure.—*Gnaphalium marinum*, Johnson's Gerarde, p. 640. f. 3.—*Gnaphalium legitimum*, Gært. v. ii. p. 391. t. 165.—Clust. Hist. v. i. p. 329, with a figure.—*Chrysanthemum perenne gnaphaloides maritimum*, Moris. v. iii. p. 21. sect. 6. t. 4. f. 47.—*Polium gnaphaloides*, Alpin. Exot. p. 147. t. 146.—Sea Cotton-weed, Petiv. H. Brit. t. 20. f. 8.

Localities.—Sandy sea-shores, principally on the east and south of England, rare.—*Cornwall;* On the gravelly shore between Penzance and St. Michael's Mount: Ray; 1690. I did not observe it there: Mr. H. C. Watson, in N. B. G.; 1835.—*Devon;* On the Devonshire Coast: Dr. Withering.—*Dorset;* Near Pool: Hudson. On the Burton and Bridport Sands: Rev. Palk Welland. Near Burton, by Bridport: Rev. J. Lightfoot.—*Essex;* At Landguard Fort: Mr. T. F. Forster, jun.—*Kent;* In the Isle of Shepey: Hudson.—*Suffolk;* On the beach just above high-water mark, one mile north of Landguard Fort, 1793; also between Lowestoft and Pakefield, and on other parts of the Suffolk coast: Sir J. E. Smith. Aldborough, and Orford, near the Light Houses: Rev. G. Crabbe. Beach at Dunwich, plentifully: Mr. Davy.—WALES. *Anglesea;* On the sand near Abermenai Ferry, plentifully: Ray. Now become very scarce below Llanfaelog, where Mr. Brewer "found it in great plenty for a mile together," on Sept. 5, 1727: Rev. H. Davies.

Perennial.—Flowers in August and September.

Root woody, branched, descending to a great depth in the sand. *Stems* from 6 inches to a foot high, recumbent at the base, brittle, cylindrical, very leafy, branched; branches upright, corymbose. *Leaves* numerous, scattered, somewhat 4-ranked, sessile, oblong, blunt, flat, crenate, withering, permanent, clothed like every other part of the plant, with a dense, white, cottony down. *Flowers* bright yellow, in terminal corymbose tufts. *Involucrum* densely woolly, almost concealing the small yellow florets, which are remarkably prolonged down the sides of the germen (see fig. 4.), forming two ear-like appendages, which finally form a border to the *seed*. *Receptacle* small, nearly globular, with strap-shaped, chaffy scales, about as long as the involucrum, smooth in the lower part, cottony in the upper.

This plant is a native of the south of Europe, and is said to grow in great plenty on the borders of the Mediterranean sea. Sir J. E. Smith says, that it is generally taken for the original ancient *Gnaphalium* of Dioscorides, it being frequent on all the shores of the Archipelago; and this opinion is confirmed by Tournefort, in his Voyage into the Levant, English 4to. ed. v. i. p. 21; 8vo. ed. v. i. p. 27. It was this celebrated French Botanist who detected the 2 spurs on the tube of each floret, which form a sort of wings to the seed, a character on which the present genus is founded.



Cladium Mariscus. Prickly Twig-rush. 2

Mathews Del. & Sc   Pub^d by W Baxter Botanic Garden Oxford 1843

CLA′DIUM [*].

Linnean Class and Order. DIA′NDRIA [†], MONOGY′NIA.

Natural Order. CYPERA′CEÆ [‡], *Juss.*—Lindl. Syn. p. 278.; Introd. to Nat. Syst. of Bot. p. 304.—Rich. by Macgilliv. p. 392.—Loud. Hort. Brit. p. 541.—Mack. Fl. Hibern. p. 318.—Hook. Brit. Fl. (4th ed.) p. 427.—CYPEROIDEÆ, Juss. Gen. Pl. p. 26.—Sm. Gr. of Bot. p. 68.—CYPERALES; sect. CYPERINÆ; type, PAPYRACEÆ; Burn. Outl. of Bot. v. i. pp. 354 & 356.—CALAMARIÆ, *Linn.*

GEN. CHAR. *Stems* leafy. *Inflorescence* terminal and axillary, panicled. *Spikelets* numerous, aggregate, bracteated, 1- or 2-flowered (see fig. 1). *Glumes* (see fig. 1 to 4.) somewhat 2-ranked, imbricated, concave, sheathing, mostly sterile, one or two of the uppermost only being perfect and single-flowered (see fig. 2). *Corolla* none. *Filaments* (see fig. 2.) 2 or 3, strap-shaped, longer than their glume. *Anthers* strap-shaped, upright. *Germen* (see fig. 2.) superior, egg-shaped, without any bristles or scales (hypogynous setæ) at the base. *Style* (see figs. 2 & 5.) thread-shaped, the length of the stamens, deciduous, but without a joint at the bottom. *Stigmas* 2, 3, or 4, slender, pointed, downy. *Fruit (drupa)* (fig. 7.) a nut, with a thick fleshy epicarp (external coat), egg-shaped, pointed (see fig. 6). *Seeds* smooth.

The much-branched *panicle;* the 1- rarely 2-flowered, aggregate *spikelets*, with chaffy, sheathing *glumes*, the lower ones smaller and empty; and the *fruit* without bristles at the base; will distinguish this from other genera, without a corolla, in the same class and order.

One species British.

CLA′DIUM MARI′SCUS. Prickly Twig-rush. Prickly Bog-rush. German Prickle-rush. Long Bastard Cyperus.

SPEC. CHAR. Culm round, smooth, leafy. Leaves serrated at the margins and keel with strong, upright, bristly teeth. Panicle much divided, leafy. Spikelets capitate.

Brown's Prod. p. 236.—Sm. Engl. Fl. v. i. p. 36.—With. (7th ed.) v. ii. p. 81.—Lindl. Syn. p. 283.—Hook. Brit. Fl. p. 13.—Macr. Man. Brit. Bot. p. 249.—Hook. Fl. Scot. p. 11.—Winch's Fl. of Northumbl. and Durh. p 3.—Walker's Fl. of Oxf. p. 9.—Murr. North. Fl. p. 22.—Irv. Lond. Fl. p. 89.—Baines' Fl. of Yorksh. p. 112.—Leight. Fl. of Shropsh. p. 35.—Mack. Catal. Pl. of Irel. p. 9.; Fl. Hibern. p. 324.—*Cladium germanicum*, Schrad. Fl. Germ. v. i. p. 75. t. 5. f. 7.**—Gray's Nat. Arr. v. ii. p. 70.—*Schœnus Mariscus*, Linn. Sp. Pl. p. 62.—Huds. Fl. Angl. (2nd ed.) p. 14.—Engl. Bot. t. 950.—Host. Gram. Austr. v. iii. p. 37. t. 53.—Willd. Sp. Pl. v. i. pt. I. p. 259.—Sm. Fl. Brit. v. i. p. 43.—With. 2nd ed. v. i. p. 42.; 5th ed. v. ii. p. 109.—Davies' Welsh Bot. p. 6.—Purt. Midl. Fl. v. i. p. 61.—Relh. Fl. Cant. (3rd ed.) p. 20.—Perry's Pl. Varvic. Sel. p. 5.—*Cyperus longus inodorus sylvestris*, Ray's Syn. p. 426.—Johnson's Gerarde, p. 29. f. 3.—Bauh. Hist. v. ii. p. 504. f. 1.—*Cyperus longus inodorus vulgaris*, Park. Theat. Bot. p. 1263. f. 1. in p. 1264.—*Cyperus longus inodorus major foliis et carina serratis*, Moris. v. iii. p. 237. sect. 8. t. 11. f. 24.—*Pseudo-cyperus palustris, foliis et carina serratis*, Scheuchz. Agr. p. 375. t. 8. f. 7—11.

Fig. 1. A Spikelet.—Fig. 2. An inner Glume, with its Flower.—Figs. 3 & 4. Two of the outer Sterile Glumes.—Fig. 5. Germen. Style, and Stigmas.—Fig. 6. A Nut, with its loose external covering.—Fig. 7. The same with the coat removed.—Fig. 8. Portion of the root.—*All*, except figs. 6, 7, & 8, *magnified*.

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[*] From *clados*, Gr. a *branch;* in allusion to the branchy appearance of the inflorescence.

[†] See fol. 50, note †.

[‡] See fol. 436, *a*.

Localities.--In boggy and fenny places; sometimes near the sea, but not common.—*Cambridgesh.* On Hinton Moor, plentifully: Ray.—Fulbourn; Teversham; Chippenham Moors; and in the Isle of Ely: Rev. R. Relhan. Pools in the Brickfield beyond the Observatory: W. H. Coleman, in N. B. G. So common on the moors about Cambridge that it is often used in that town for lighting fires: Mr. Crowe.—In *Cheshire:* Sir W. J. Hooker.—*Cornwall;* Sea-side between Penzance and Marketjeu: Ray. Gulval Marsh, between Penzance and Marazion: Mr. H. C. Watson, in N. B. G. and Mr. W. Willis.—*Cumberland;* Gelt-bridge Farm: Hutchinson.—*Dorset;* At Weymouth, by the Fleet, in ditches communicating with the salt water: Dr. Pulteney.—*Durham;* Hell Kettles, near Darlington: Robson.—*Hants;* Portsea: Rev. G. E. Smith.—*Kent;* In Ham Ponds, near Eastry: L. W. Dillwyn, Esq.—*Lincolnsh.* East Fen: B. G.—*Norfolk;* On St. Faiths Newton Bogs. In Ellingham Fen; about St. Olave's Bridge; and abundantly in the reach of marshes between Bungay and Beccles: Mr. Woodward. At Mantby, and Filby: Mr. Wigg. Horning, near the Broad: D. Turner, Esq. Swaffham: N. J. Winch, Esq. Royden Fen: Rev. A. Bloxam.—*Shropsh.* S. W. margin of Croesmere Mere; and Oakley Park, near Ludlow: *Fl. Shropsh.*—*Somerset;* On King's Sedgemoor, abundantly: B. G.—*Staffordsh.* Chartley Moss: N. B. G.—*Suffolk;* River-side between Bungay and Beccles; and by the river adjoining Mutford Bridge: B. G.—*Warwicksh.* In boggy places by the River Thame near Tamworth: Ray —*Westmoreland;* Cunswick Tarn near Kendal: N. B. G.—*Worcestersh.* Feckenham Bog: T. Purton, Esq.—*Yorksh.* In Terrington Car, rare; by Knaresborough, in wet places near the brook towards Newby; and Mr. Duncombe's low grounds, abundant: B. G. Askham bogs and Buttercrambe moor, near York; and in a ditch on the road from Doncaster to the decoy: Mr. Baines, in *Fl. York.*—WALES. *Anglesea;* Cors bodeilio Cors ddygai: Rev. H. Davies, and Mr. Owen Griffith; 1842.—*Glamorgansh.* Cromlyn Bog near Swansea: B. G.—SCOTLAND. *Forfarshire;* formerly found in this county.—*Sutherland;* In large quantity in a marsh by the road-side, about half way between Kylestrome and Batcall Church: *North. Fl.*—*Wigtonsh.* Plentiful in Galloway: *Br. Fl.* 5th ed. 1842.—IRELAND. By the sides of small lakes in *Cunnamara*, abundant. *County of Fermanagh;* and in a bog near Lough Allan, *County of Cork: Fl. Hibern.*

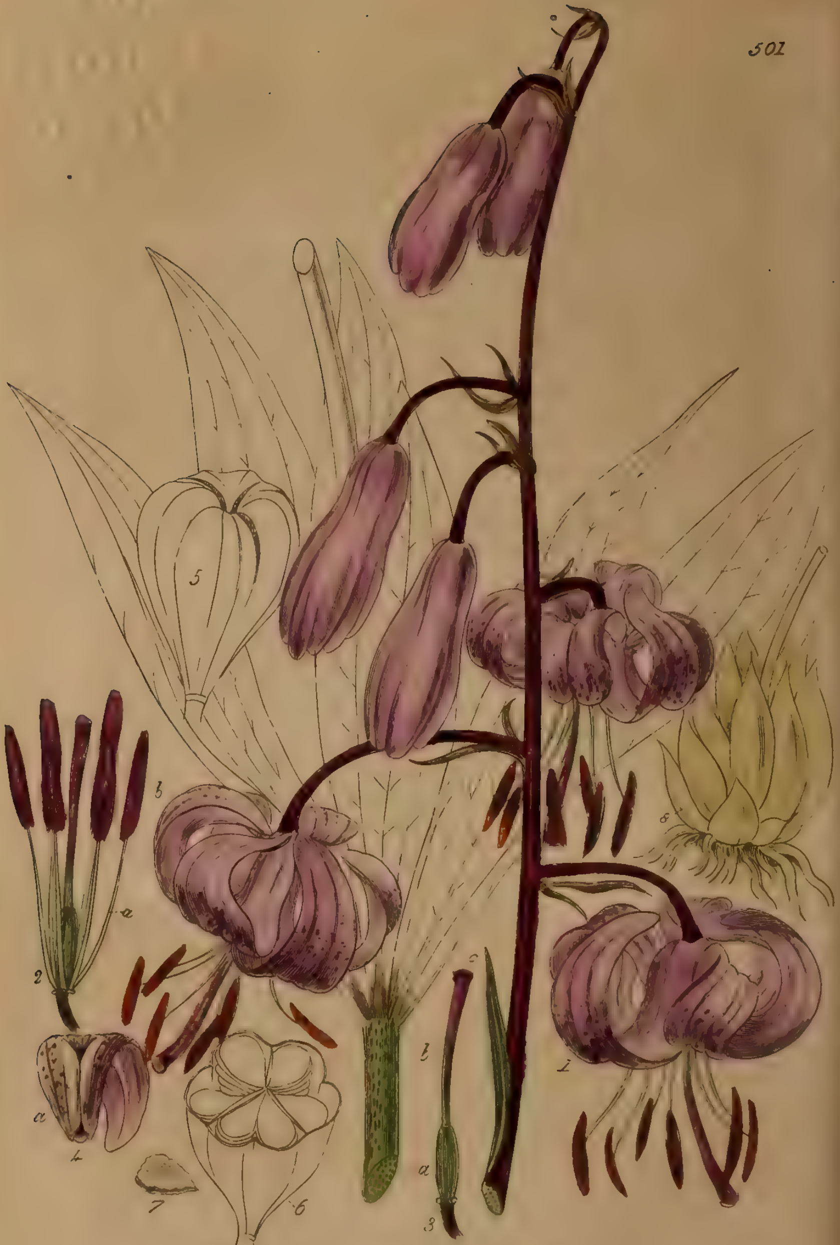
Perennial.--Flowers in July and August.

Root long and creeping. *Culms* from 3 to 5 feet high, upright, polished, jointed, leafy, angular at the top. *Leaves* sheathing, very long, strap-shaped, keeled, triangular at the point, their margins and keels strongly serrated, almost prickly. *Panicle* upright, much divided, leafy; *peduncles* compressed, flat on the upper sides, rounded beneath, smooth, with sheathing, bristle-shaped bracteas at their base. *Spikelets* (see fig. 1.) egg-shaped, from 6 to 12 in a dense head. *Glumes* (see figs. 2, 3, & 4.) numerous, imbricated, brown; inner ones (fig. 2.) the longest, generally the two or sometimes three innermost ones are floriferous, of which one or two bears a coated *nut* (fig. 6.) almost as large as the spikelet. *Stigmas* (fig. 5.) usually 2, sometimes cloven, downy.

This plant, which is rare in most parts of England, and still more rare in Scotland, is said to be so plentiful in the Fens of Cambridgeshire, as to cover hundreds of acres, to the total exclusion of all other plants. It serves for thatching instead of straw, and often grows in such quantities in pools, as to form floating islands. It is said to be hurtful to cows.

The drawing for the accompanying plate was made from a specimen gathered in Anglesea, by Mr. Owen Griffith, in Sept. 1842, and kindly communicated to me by J. Satterfield, Esq.

I have also received specimens of it from Mr. W. Willis, of Charlestown near St. Austell, Cornwall.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Lilium. Martagon. Martagon Lily. ♃

Mathews Del & Sc

Pub.d by W. Baxter Botanic Garden Oxford 1839.

LI'LIUM[*].

Linnean Class and Order. Hexa'ndria[†], Monogy'nia.

Natural Order. Lilia'ceæ[‡], *Decand.*—Lindl. Syn. p. 266.; Introd. to Nat. Syst. of Bot. p. 279.—Rich. by Macgilliv. p. 403.—Hook. Brit. Fl. (4th ed.) p. 423.—Lilia, Juss. Gen. Pl. p. 48.—Tulipaceæ, *Decand.*—Loud. Hort. Brit. p. 539.—Liliales; sect. Liliacinæ; type, Liliaceæ; Burn. Outl. of Bot. v. i. pp. 418, 425, & 433.—Coronariæ, *Linn.*

Gen. Char. *Calyx* none. *Corolla (perianthium*[§]*)* (see fig. 1.) inferior, bell-shaped, of 6 nearly equal, straight, or revolute, deciduous petals; with a longitudinal nectariferous line or furrow on the inner surface, from the base to the middle (see fig. 4, *a*). *Filaments* (see fig. 1. and fig. 2, *a*.) 6, awl-shaped, upright, shorter than the corolla. *Anthers* (fig. 2, *b*.) oblong, versatile. *Germen* (fig. 3, *a*.) superior, oblong, cylindrical, with 6 furrows. *Style* (fig. 3, *b*.) cylindrical, elongated. *Stigma* (fig. 3, *c*.) thickish, entire. *Capsule* (fig. 5.) oblong, upright, 6-furrowed, with a 3-cornered, hollow, blunt tip; of 3 cells, and 3 valves. *Seeds* (see figs. 6 & 7.) numerous, flat, inversely egg-shaped, packed one upon another in 2 rows, with a blunt margin, and a spongy *testa*.

The naked, inferior, bell-shaped *corolla*, of 6 petals, with a longitudinal nectariferous line or furrow at their base; the elongated *style;* the entire *stigma;* and the 6-furrowed, 3-valved, 3-celled, many-seeded *capsule;* will distinguish this from other genera in the same class and order.

One species British.

LI'LIUM MA'RTAGON. Martagon Lily. Turk's-Cap Lily. Turk's-Cap Shaw. Smooth-stalked Martagon Lily.

Spec. Char. Leaves in whorls, egg-spear-shaped. Flowers reflexed; Petals revolute.

Engl. Bot. Supp. t. 2799.—Bot. Mag. t. 1634.—Jacq Fl. Austr. t. 351.—Redouté Liliac, t. 146.—Linn. Sp. Pl. p. 435.—Willd. Sp. Pl. v. ii. pt. i. p. 88.—Ait. Hort. Kew. 1st ed. v. i. p. 431.; 2nd ed. v. ii. p. 242.—Decand. Fl. Fr. v. iii. p. 203.—Macr. Man. Brit. Bot. p. 236.—*Lilium floribus reflexis montanum*, Bauh. Pin. p. 77.—Ray's Hist. 1112.—*Lilium flore nutante ferugineo*, Bauh. Hist. v. ii. p. 692.—*Lilium montanum minus*, Johnson's Gerarde, p. 196. f. 2.—*Lilium Martagon floribus reflexis rubris punctatum et non punctatum*, Moris. Hist. Pl. Oxon. v. ii. p. 408. sect. 4. t. 20. f. 7?—*Lilium foliis verticillatis, floribus reflexis, corollis revolutis*, Linn. Hor. Cliff. p. 120. n. 3.

Fig. 1. Corolla.—Fig. 2. Stamens and Pistil; *a.* filament; *b.* anther.—Fig. 3. A Pistil; *a.* germen; *b.* style; *c.* stigma.—Fig. 4. A separate Petal; *a.* the nectary.—Fig. 5. Capsule.—Fig. 6. Transverse section of ditto.—Fig. 7. A Seed.—Fig. 8. A Bulb.

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[*] Of Pliny, and other Latin authors.

[†] See folio 33, note †.

[‡] See folio 1, *a*.

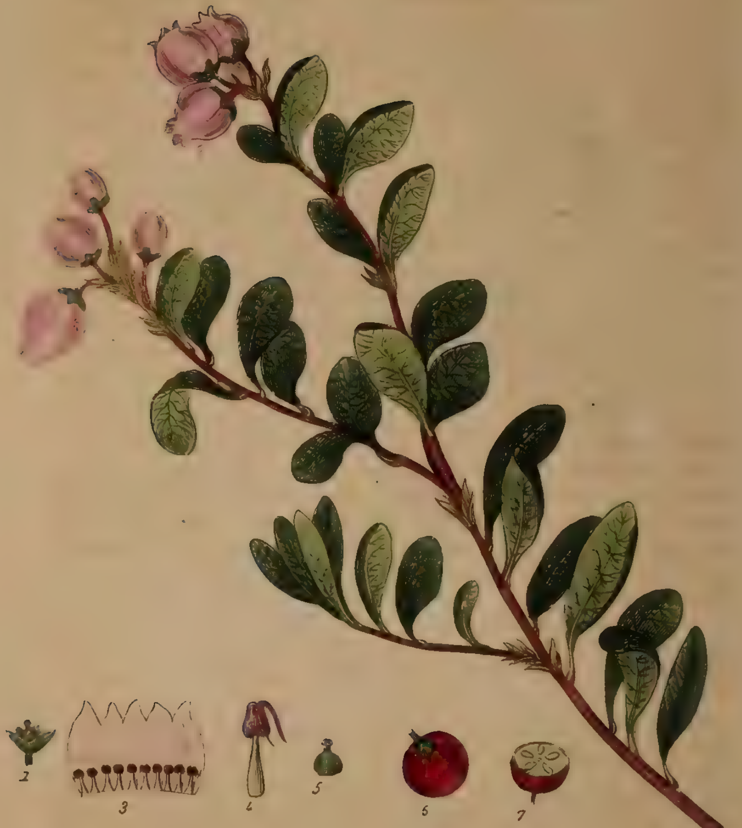
[§] See folio 33, note ‡.

LOCALITIES.—In copses, and on banks among bushes; a doubtful native.—*Essex;* In tolerable plenty near the village of Sampford, on the road from Great Bardfield to Walden, where it was pointed out to Mr. EDWARD DOUBLEDAY, in May, 1841, by Mr. R. M. SMITH, of Great Bardfield, who had known of it for above twenty years. The spot is a high bank, sprinkled with low bushes, on the side of a lane leading from the village eastward to some unexplored part of the county: *The Phytologist,* v. i. p. 62.—*Kent;* At Ash, near Wrotham, where it grows plentifully in a very wild situation on an estate belonging to Mr. GLADDISH: Mr. N. B. WARD, in *The Phytologist,* v. i. p. 76.—*Surrey;* "Communicated" to *English Botany,* "by the Rev. WILLIAM A. BROMFIELD, and Mr. BORRER, from a copse on the grounds of Mr. REID at Woodmanstone, about five miles from Epsom, well known to the inhabitants of the village under the name of Turk's-cap Shaw. It grows among the thick underwood in great abundance, and is remembered by the older people of the neighbourhood to have flourished truly wild in that locality for more than half a century. Found likewise under similar circumstances in Marden Park near Godstone, and in a wide hedge-row between Headley and Juniper Hall, under Box Hill:" *English Botany, Supp.* folio 2799. See also *Loud. Mag. Nat. Hist.* v. iii. p. 153. and vol. viii. p. 117. In a little coppice to the right of the lane leading from Mickleham to Headley; the coppice was (in 1826) overshadowed by oak trees of considerable size, and the underwood had been cut during the previous year, so that the tall racemes of the Lily stood up nobly and conspicuously above the brushwood, and it would have been difficult for any passing observer not to have noticed them: Mr. E. NEWMAN, in *The Phytol.* p. 26. In the greatest profusion (in 1840) in the station last mentioned. In some parts of the coppice the plants were so crowded, that the flowers produced a perfect blaze of the richest colour among the young trees: *ibid.*—*Yorkshire;* Said to grow in a wood near Kirby Fleetham, to all appearance wild: see *Loud. Mag. Nat. Hist.* v. iii. p. 438.

Perennial.—Flowers in July.

Bulb (fig. 8.) composed of spear-shaped, loose, yellow scales, with thick, long, whitish fibres at the base. *Stem* about 3 feet high, upright, straight, cylindrical, shining, slightly pubescent, pale green at bottom, purplish upwards, with scattered black spots. *Leaves* egg-spear-shaped, quite entire, the upper ones almost strap-shaped; in very regular, distant whorls. *Flowers* terminating the stem in a loose, wide-set panicle; their peduncles purple, spotted with black, with two spear-shaped *bracteas* at their base. *Corolla* pale purple, with dark spots; petals elegantly recurved, the three outer slightly hairy, with a raised line along the middle. *Filaments* and *Style* pale. *Anthers* bay, with orange-coloured pollen.

This very ornamental plant is a native of Germany, France, Siberia, Spain, and Portugal. It appears to have been cultivated in our gardens for nearly three centuries, for GERARDE says, in 1597, that he had had it many years growing in his garden. Its claim to be considered a native of England rests upon the authorities recorded above. A white-flowered variety is sometimes met with in gardens; and also a larger variety with a pubescent stem, figured in the *Bot. Mag.* t. 893. "The bulbs of this and some other species of Lily are cultivated in some parts of the Continent as the potatoe is with us, and furnish a nutritious and agreeable article of vegetable diet." *Engl. Bot.*



Archtostaphylos Uva ursi. Red Bear-berry. ♃

Mathews Del. & Sc. Pub.d by W. Baxter Botanic Garden Oxford 1843.

ARCTOSTA′PHYLOS *.

Linnean Class and Order. Deca′ndria †, Monogy′nia.

Natural Order. Eri′ceæ ‡, *Brown's* Prod. p. 557.—Lindl. Syn. p. 172; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 179.—Hook. Brit. Fl. (4th ed.) p. 411.—Erica′ceæ; subtribe, Androme′deæ, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 and 787.—Loud. Arb. et Frutic. Brit. pp. 1076 and 1077.—Ericineæ, Rich. by Macgilliv. p. 450.—Ericæ, Juss. Gen. Pl. p. 159.—Sm. Gram. of Bot. p. 115.—Syringales; subord. Ericosæ; sect. Ericinæ; type, Ericaceæ; subtype, Ericidæ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—Bicornes, *Linn.*

Gen. Char. *Calyx* (fig. 1.) small, inferior, of 1 sepal, in 5 rather blunt segments, permanent. *Corolla* (fig. 2.) of 1 petal, globose, or egg-shaped, flattened and transparent at the base; its limb in 5 small, recurved, bluntish segments (see fig. 3). *Filaments* (see figs. 3 & 4.) 10, slightly attached to the base of the corolla, and about half its length, awl-shaped, smooth. *Anthers* without pores, fixed by the back beneath the apex, where they are furnished with a pair of reflexed awns or spurs. *Germen* (fig. 5.) superior, roundish, seated on an orbicular disk, or half immersed in it. *Style* (see fig. 5.) 1, terminal, cylindrical, upright, about as long as the corolla. *Stigma* blunt. *Berry* (see figs. 6 & 7.) nearly globular, smooth, fleshy, 5-celled; *cells* 1-seeded.

The 5-parted *calyx;* the egg-shaped *corolla*, with a small, 5-cleft, revolute limb; the smooth *filaments;* the *anthers* without pores at the apex; and the fleshy, smooth, 5-celled, 5-seeded *berry;* will distinguish this from other genera in the same class and order.

It differs from *Arbutus* (t. 497.) in the berry being *smooth*, not *granulated.*

Two species British.

ARCTOSTA′PHYLOS U′VA U′RSI. Bear-berries. Bear-whortleberries. Red Bear-berry. Red-berried Trailing Arbutus. Meal-berry.

Spec. Char. Stems procumbent. Leaves permanent, inversely egg-shaped, quite entire, coriaceous, shining. Racemes terminal.

Arctostaphylos Uva Ursi, Spring. Syst. Veg. v. ii. p. 287.—Lindl. Syn. p. 174.—Macr. Man. Brit. Bot. p. 151.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 835.—Loud. Arb. et Frutic. Brit. v. ii. p. 1123. f. 923.; Encycl. of Trees and Shrubs, p. 577. f. 1087.—Leight. Fl. of Shropsh. p. 185.—Burn. Outl. of Bot. v. ii. p. 949.—*Arbutus Uva Ursi*, Linn. Sp. Pl. p. 566.—Engl. Bot. t. 714.—Fl. Dan. t. 33.—Huds. Fl. Angl. (2nd ed.) p. 177.—Linn. Fl. Lapp. (2nd ed.) p. 129. t. 6. f. 3.—Willd. Sp. Pl. v. ii. pt. i. p. 618.—Sm. Fl. Brit. v. ii. p. 443.; Engl. Fl. v. ii. p. 253.—With. (7th ed.) v. ii. p. 523.—Hook. Brit. Fl. p. 189.—Lightf. Fl. Scot. v. i. p. 216. t. 11. *c*, *d*.—Woodv. Med. Bot. v. ii. p. 194. t. 70.—Thornt. Fam. Herb. p. 451, with a figure.—Pursh. Fl. Amer. Sept. v. i. p. 283.—Hook. Fl. Scot. p. 126.—Johnst. Fl. of Berw. v. ii. p. 280.—Winch's Fl. of Northumb. and Durh. p. 27.—Dick. Fl. Abred. p. 37.—Irv. Lond. Fl. p. 247.—

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. Ditto, opened vertically.—Fig. 4. A Stamen.—Fig. 5. Germen.—Fig. 6. Berry.—Fig. 7. Transverse section of ditto.

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* From *arctos*, Gr. a *bear;* and *staphyle*, Gr. a *grape.*

† See folio 37, note †. ‡ See folio 449, *a.*

Baines' Fl. of Yorksh. p. 70.—Mack. Catal. of Pl. Irel. p. 39.: Fl. Hib. p 182.—*Arbutus procumbens*, Salb. Prod. p. 289.—*Vaccinia rubra foliis myrtinis crispis*, Merr. Pin. p. 123.—Ray's Syn p. 457; *the synonyms confused* (Smith).—*Vaccinia ursi, sive Uva ursi apud Clusium*, Johns. Ger. p. 1416. f. 5.—*Uva ursi Galeni Clusii*, Park. Theatr. Bot. p. 1457. f. 6.—*Uva ursi*, Clus. Hist. v. i. p. 63, with a figure —*Uva ursi buxifolia*, Gray's Nat. Arr. v. ii. p. 400.—*Vitis Idæa, foliis carnosis et veluti punctatis*, Bauh. Pin. p. 470.

Localities.—On dry, heathy, mountainous, and rocky places.—*Cheshire;* On the hills betwixt Cheshire and Yorkshire; near Greenfield: B. G.—*Cumberland;* Marindale Dale-Head, Ullswater: B G. Descending Grasmoor to Crummockwater, rather on the Buttermere than the Scale Hillside: N. B. G.—*Derbysh.* On Kinder-Scout near Hayfield: B. G. Fox House, on the Moors: 1835; N. B. G.—*Durham;* Cronkley Fell; Force Garth Scar, Teesdale Forest; and near Caldron Scout: B. G.—*Lancash.* Four miles from Heptonstall near Widdop, on a great stone by the river Gorlpe: Merrett, (1666). Shown to Ray, on the same spot, (before 1690), by T. Willisel: *Ray's Syn.* "There is no such river as Gorlp, nor is the plant now to be found in Widdop:" Mr. Leyland, in N. B. G.—*Northumberland;* On the Heath on the South side of East Common Wood near Hexham; on Acton Cleugh, five miles N. of Blanchland; and on Little Waney-house Crag, sparingly: *Fl. of North. & Durh.*—*Shropsh.* Devil's Arm-chair, Stiperstones Hill: A. Aiken, Esq. in *Fl. of Shropsh.*—*Westmoreland;* Dale-head, near Ullswater: B. G.—*Yorkshire;* Hutchin Moor, near Todmorden; on Cronckley Scarr, and on Falcon Clints Scarr, on the opposite side of the Tees above Middleton. It formerly grew in the Eavs at Heptonstall, but is now eradicated: Mr. Baines, in *Fl. Yorksh.*—SCOTLAND. Abundant on dry heathy, rocky places, in the Highlands and Western Isles: Hooker.—IRELAND. Very abundant on the limestone mountains, barony of Burren, county of Clare, and on several mountains in Cunnamara. At Fair-head, county of Antrim: *Fl. Hibern.*

Shrub.—Flowers in June.

Root long, branched, and fibrous. *Stems* numerous, woody, cylindrical, smooth, or slightly pubescent, very long, trailing on the ground, much branched, leafy. *Leaves* alternate, on short petioles, inversely egg-shaped, blunt, entire, stiff, rigid, evergreen, shining and wrinkled on the upper surface, veiny and paler beneath, smooth, except the slightly revolute margins, which are minutely downy. Scales of the *buds* spear-shaped, pointed, permanent. *Stipulas* none. *Flowers* in short, drooping, terminal *clusters (racemes)*, with many pointed, coloured *bracteas.* Segments of the *calyx* pale, often fringed. *Corolla* of a beautiful rose-colour, smooth. *Berry* globose, depressed, smooth and glossy, red when ripe, about the size of a holly-berry, mealy within, very austere and astringent.

As well as of Britain this plant is also a native of North America, in the pine-barrens of New Jersey, and in mountainous and rocky situations of Canada and New England; and the Island of Unalascha. It is abundant on the continent of Europe, as in Sweden, Denmark, and most parts of the north; also in Switzerland, Germany, Carniola, Dauphiny, Savoy, Siberia, &c.—The whole plant is powerfully astringent; it abounds in the tannin principle; and, both in Sweden and America, it has been used for tanning leather, and dying it an ash-grey colour. Half a drachm of the powder of the leaves given every morning, or 2 or 3 times a day, has been found useful in calculus and nephritic complaints, and other disorders of the urinary passages. It was also strongly recommended, by the late Dr. Bourne, of Oxford, in cases of pulmonary consumption*.—Pursh says, that on the plains of the Mississipi the Indians smoke the leaves under the name of *Sacacommis*, and consider them of great medicinal virtue. Dr. Johnston informs us *(Fl. of Berw.)*, that the berries of this Shrub are known by the common people in the west of Berwickshire by the name of *Rapperdandies*, and are eaten by them. They are dry, mealy, and austere, but are said to afford excellent food for grouse and other game.

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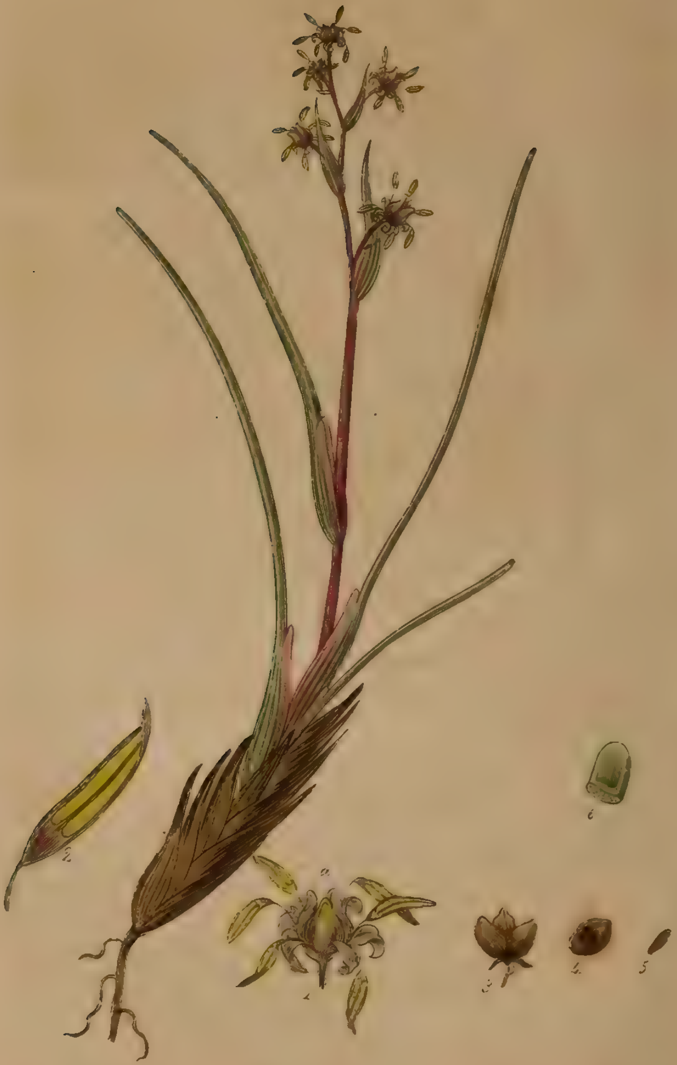
* See "Cases of Pulmonary Consumption, &c. Treated with Uva Ursi. By R. Bourne, M. D.," &c. &c. 8vo. Oxford. 1805.



Scheuchzeria palustris. Marsh Scheuchzeria. ♃

Mathews, Del. & Sc.
Pub^{d} by W. Baxter Botanic Garden Oxford 1843

SCHEUCHZE′RIA[*].

Linnean Class and Order. HEXA′NDRIA[†], TRIGY′NIA.

Natural Order. JUNCAGI′NEÆ[‡], *Richard.*—Lindl. Syn. p. 252; Introd. to Nat. Syst. of Bot. p. 290.—Loud. Hot. Brit. p. 536.—Mack. Fl. Hibern. p. 270.—Hook. Brit. Fl. (4th edit.) p. 422.—ALISMACEÆ; sect. JUNCAGINEÆ; Rich. by Macgilliv. p. 399.—JUNCI; sect. 4. Juss. Gen. Pl. pp. 43 & 46.—Sm. Gram. of Bot. pp. 72 & 73.—JUNCALES; sect. NAYADINÆ; type, JUNCAGINACEÆ; Burn. Outl. of Bot. v. i. pp. 403, 413, & 415.—TRIPETALOIDEÆ, *Linn.*

GEN. CHAR. *Perianthium (calyx* and *corolla)* (see fig. 1.) inferior, of 6 oblong, pointed, equal, uniform, recurved, permanent, brown, petal-like leaves. *Filaments* (see fig. 1.) 6, hair-like, lax, opposite to the leaves of the perianthium, and not so long. *Anthers* (see fig. 2.) terminal, longer than the filaments, dependant, strap-shaped, flattened, of 2 cells, opening at the inner side, by two longitudinal, parallel fissures. *Germens* (see fig. 1, *a.*) 3, superior, egg-shaped, compressed, nearly the length of the perianthium. *Styles* none. *Stigmas* lateral, oblong, blunt, at the outer margin of each germen. *Capsules* (fig. 3.) 3, roundish, compressed, pointed, inflated, spreading, each of 1 cell and 2 valves. *Seeds* (fig. 5.) oblong, 1 or 2 in each capsule (see fig. 4).

The *perianthium* of 6 equal, petal-like, leaves; the elongated *anthers;* and the 3 roundish, spreading, inflated, 2-valved, 1- or 2-seeded *capsules;* will distinguish this genus from others in the same class and order.

Only one species known.

SCHEUCHZE′RIA PALU′STRIS. Marsh Scheuchzeria.

SPEC. CHAR.

Engl. Bot. t. 1801.—Fl. Dan. t. 76.—Linn. Sp. Pl. p. 482.; Fl. Lapp. (2nd ed.) p. 103. t. 10. f. 1.—Willd. Sp. Pl. v. ii. pt. 1. p. 263.—Sm. Comp. Fl. Brit, (3rd ed.) p. 57.; Engl. Fl. v. ii. p. 199.—With. 5th ed. v. ii. p. 416.; 7th ed. v. ii. p. 459.—Gray's Nat. Arr. v. ii. p. 218.—Lindl. Syn. p. 252.—Hook. Brit. Fl. p. 171.—Macr. Man. Brit Bot. p. 222.—Irv. Lond. Fl. pp. 241 & 242.—Baines' Fl. of Yorksh. p. 98.—Leight. Fl. of Shrop. p. 155.—*Juncus floridus minor*, Bauh. Pin. p. 12.—Rudb. Camp. Ely. v. i. p. 110. f. 2.—*Juncoidi affinis palustris*, Scheuchz. Agr. p. 336.—*Gramen junceum aquaticum, semine racemoso,* Loes. Fl. Pruss. p. 114. t. 28.

Fig. 1. A Flower; *a.* the germens.—Fig. 2. A separate Stamen.—Fig. 3. Capsules.—Fig. 4. A single Capsule, with one of its valves removed.—Fig. 5. A Seed.—Fig. 6. Point of one of the leaves.—Figs. 1, 2, and 6, *magnified.*

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[*] So named by LINNÆUS, in memory of the two brothers, JOHN JAMES, professor of Mathematics at Zurich, (born 1672; died 1738), author of *Novem Itinera per alpinas regiones facta.* 1723. 4to.; and JOHN SCHEUCHZER, professor of Physics, at Zurich, author of a famous treatise on Grasses, intitled, *Agrostographia sive Graminum, Juncorum; Cyperorum, Cyperoidum, iisque affinium Historia, &c.* 1719. 4to.

[†] See folio 33, note †.

[‡] See folio 60, *a.*

Localities.—In wet spongy mountain bogs; very rare.—*Shropsh.* Bomere Pool, near Shrewsbury; Aug. 4, 1832: C. C. Babington, Esq. in *Loud. Mag. Nat. Hist.*, v. vi. p. 368. Found in the same locality by the late John Jeudwine, Esq., M. A. Second Master of Shrewsbury School, seven years previously to Mr. Babington's discovery: Mr. Leighton, in *Fl. of Shropsh.* On the moss on the west side of Bomere Pool, and also on the adjoining Shomere moss, both near Shrewsbury: *Fl. of Shropsh.*—*Yorksh.* In Lakeby Car, near Borough-bridge, growing abundantly along with *Lysimachia thyrsiflora*, 1807: (Rev. Mr. Dalton.) Sir J. E. Smith, in *English Botany.* Mr. Baines says (1840), that he had diligently examined Lakeby Car, for five seasons, without being able to find a single specimen. See *Fl. of Yorkshire.*—SCOTLAND. *Perthshire:* Methven, near Perth: Mr. Duff, 1833.

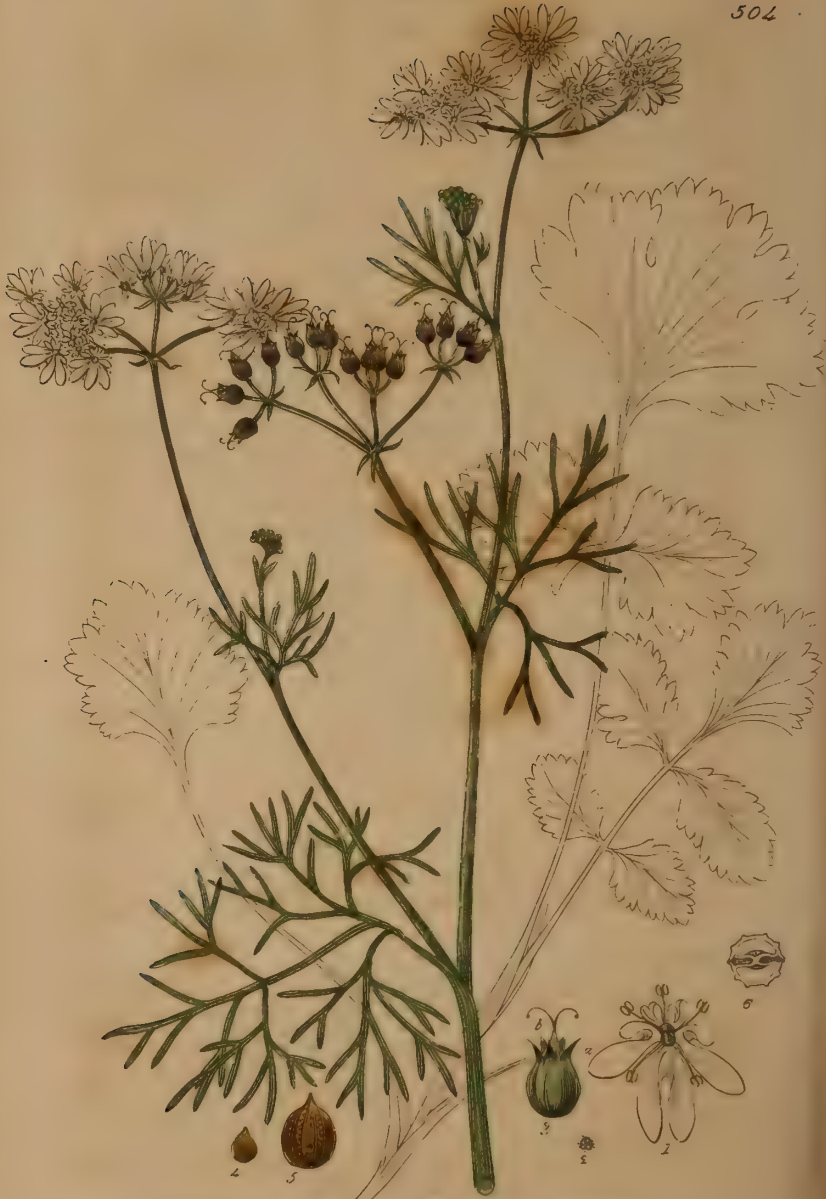
Perennial.—Flowers in May and June.

Root long, creeping, tough, with a lax, white and shining cuticle. *Stem* upright, from 5 to 8 inches high, wavy, simple, smooth, compressed. *Leaves* few, upright, 2-ranked, alternate, becoming considerably elongated after flowering, semicylindrical, blunt, with a terminal pore or depression on the upper side (see fig. 6.); spongy within, dilated at the base into a large, membranous, clasping, blunt stipula. *Cluster (raceme)* terminal, of about 5 small, inconspicuous, greenish-brown flowers, each on a partial stalk with a membranous, leaf-like *bractea* at its base. *Perianth* and *Stamens* (see fig. 1.) reflexed. *Anthers* (see figs. 1 & 2.) brown, vertical, strap-shaped, opening at the inner side by 2 longitudinal parallel fissures. *Germens* (see figs. 1, *a.*) usually 3, egg-shaped, with lateral, sessile, oblong, downy *stigmas.* *Capsules* (see fig. 3.) globose, about the size of a pea, coriaceous, inflated, wrinkled, each containing 1 or 2 egg-shaped, smooth seeds.

This very curious and interesting little plant is a native of Lapland, Sweden, Denmark, Germany, Switzerland, Prussia, Dauphine, and Siberia. It had never been found wild in Britain until the Rev. James Dalton discovered it, in 1807, growing abundantly in Lakeby Car, near Boroughbridge, as stated above; but where it has now, according to Mr. Baines' observations, become very rare, if not extinct. A living plant from Bomere Pool, near Shrewsbury, was kindly communicated to me in July, 1838, by W. Borrer, Esq. of Henfield, Sussex.

The *plant*, up springing from the *seed*,
    Expands into a perfect *flow'r;*
The virgin-daughter of the mead,
    Wooed by the sun, the wind, the show'r;
In loveliness beyond compare,
It toils not, spins not, knows no care,
    Trained by the secret hand that brings
All beauty out of waste and rude,
    It blooms a season,—dies,—and flings
Its *germs* abroad in solitude.

Montgomery.



Coriandrum sativum. Common Coriander. ⊙

Mathews Del & Sc.

Pub.^{d} by W Baxter Botanic Garden, Oxford 1843

CORIA′NDRUM*.

Linnean Class and Order. PENTA′NDRIA†, DIGY′NIA.

Natural Order. UMBELLI′FERÆ‡, Juss. Gen. Pl. p. 218.—Sm. Gram. of Bot. p. 132.—Lindl. Syn. p. 111.; Introd. to Nat. Syst. of Bot. p. 4.—Rich. by Macgilliv. p. 463.—Loud. Hort. Brit. p. 517.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 235.—Mack. Fl. Hibern. p. 113.—Hook. Brit. Fl. (4th ed.) p. 408.—UMBELLATÆ, *Linn.*—ROSALES; sect. ANGELICINÆ; type, CORIANDRACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 770, & 783.

GEN. CHAR. *Calyx* (see fig. 3, *a.*) superior, of 5 broad, pointed, unequal, permanent teeth. *Corolla* (see figs. 1 & 2.) of 5 inversely egg-shaped petals, with an inflexed point; those of the innermost flowers nearly equal and regular (see fig. 2.); those of the marginal ones irregular (see fig. 1.); the 2 inner ones equal, deeply lobed; the 2 next with 2 very unequal lobes; the odd one with 2 very large, equal, inversely egg-shaped lobes. *Filaments* (see fig. 1.) 5, thread-shaped, spreading, as long as the smaller petals. *Anthers* roundish. *Germen* (see fig. 3.) globose, smooth. *Styles* (see fig. 3, *b.*) 2, thread-shaped, spreading, each in length equal to the diameter of the fruit, their bases conical, tapering. *Stigmas* small, blunt. *Fruit* (figs. 4 & 5.) globose, smooth, 10-ribbed, hardly separable. *Carpels* with 5 primary depressed, flexuose ribs; and 4 secondary more prominent keeled ones. *Interstices (channels)* without vittæ; the commissure (inner face of the carpel) with 2 vittæ. *Seed* hollowed in front, covered by a loose membrane. *Universal Involucrum* none, or of 1 or 2 leaves; *partial one* unilateral, of about 3 strap-spear-shaped leaves. *Flowers* white.

The *calyx* of 5 broad, unequal teeth; the *corolla* of 5 inversely egg-shaped petals, with an inflexed point, the outer of which are radiant; the globose, smooth *fruit;* and the closely adhering *carpels*, each with 5 primary depressed wavy ribs, and 4 secondary more prominent keeled ones; will distinguish this from other genera in the same class and order.

Only one species known.

CORIA′NDRUM SATI′VUM. Cultivated Coriander. Common Coriander. Col.

SPEC. CHAR.

Engl. Bot. t. 67.—Fl. Græc. v. iii. p. 76. t. 283.—Linn. Sp. Pl. p. 367.—Huds. Fl. Angl. (2nd ed.) p. 123.—Willd. Sp. Pl. v. i. pt. II. p. 1448.—Woodv. Med. Bot. t. 181.—Mart. Fl. Rust. t. 141.—Sm. Fl. Brit. v. i. p. 320.; Engl. Fl. v. ii. p. 67.—With. (7th ed.) v. ii. p. 386.—Gray's Nat. Arr. v. ii. p. 522.—Lindl. Syn. p. 115.—Hook. Brit. Fl. p. 116.—Decand. Prod. v. iv. p. 250.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 382.—Macr. Man. Brit. Bot. p. 107.—Relh. Fl Cant. (3rd ed.) p. 121.—Thorn. Fam. Herb. p. 294, with a figure.—Winch's Fl. of

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Fig. 1. One of the outermost Flowers.—Fig. 2. One of the innermost Flowers.—Fig. 3. Germen; *a.* Calyx, *b.* Styles.—Figs. 4 & 5. Fruit.—Fig. 6. Transverse section of ditto.—*All, except figs.* 2 & 4, *magnified.*

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[*] From *coris*, Gr. a *bug;* the leaves when bruised smelling like that insect.

[†] See folio 48, note †.

[‡] See folio 235, *a.*

Northumb. and Durh. p. 19.—Burn. Outl. of Bot. v. ii. p. 783. N°. 3470.—Loud. Encycl. of Gard. (new edit.) p. 877. paragr. 4627. ; Encycl. of Agricul. p. 930. paragr. 6065. f. 804.—Bab. Prim. Fl. Sarn. p. 46.—Dick. Fl. Abred. p. 31.—Irv. Lond. Fl. p. 233.—*Coriandrum majus*, Bauh. Pin. p. 158.—Riv. Pentap. Irr. t. 71.—Moris. Hist. Pl. v. iii. p. 269. sect. 9. t. 11. f. 1.—*Coriandrum*, Ray's Syn. p. 221.—Johnson's Gerarde, p. 1012. f. 1.—Riv. Pentap. Irr. t. 70.—Bauh. Hist. v. iii. pt. II. p. 89, with a figure.—*Coriandrum vulgare*, Park. Theat. Bot. p. 918.

LOCALITIES.—In fields, waste places, and dunghills; not really wild.—*Cambridgesh.* In the corn-field by the road to Hinton, between Cambridge and the New Mill: Rev. R. RELHAN.—*Durham ;* On the Ballast-hills of Tyne and Wear; and near Marley Hill; a naturalized exotic: N. J. WINCH, Esq.—*Essex ;* About Coggleshall, Tolesbury, and other places: RAY. Under the Cliff, below South End: Mr. E. FORSTER, jun.—*Lincolnsh.* Wild and uncultivated places about Folkingham, very plentiful, and apparently indigenous: L. W. DILLWYN, Esq.—*Northumberland ;* On the Ballast-hills of Tyne: N. J. WINCH, Esq.—*Suffolk ;* About Ipswich: Sir J. E. SMITH. Among corn near Framlingham: CRABBE.—*Surrey ;* Lane between Dorking and Ranmore Common: N. J. WINCH, Esq. Battersea Fields: *Fl. Metr.*—In *Worcestershire:* Mr. E. LEES, in N. B. G.—SCOTLAND. *Aberdeensh.* On the Inch, opposite the dock-yards, near Aberdeen: G. DICKIE, Esq.—*Lanarksh.* Banks of the Canal, Possil, near Glasgow: Mr. W. CHRISTY, in N. B. G.

Annual.—Flowers in June.

Root small, tapering. *Stem* upright, from a foot, or a foot and a half, to 2 feet high, more or less branched, leafy, cylindrical, striated, smooth. *Leaves* compound, various; lower ones either simply or doubly pinnate, with the leaflets wedge-shaped, or fan-shaped, and sharply notched; upper leaves gradually more compound, with the segments very narrow and strap-shaped, those of the uppermost leaves almost bristle-shaped. *Umbels* lateral and terminal, stalked, of 4 or 5 *general rays*, rarely more; the *partial rays* more numerous. *Universal Involucrum* usually wanting, but sometimes of 1 or 2 small narrow leaves; *partial one* of about 3 strap-spear-shaped leaves, all directed to one side. *Calyx* more distinctly formed than is usual in umbelliferous plants. *Flowers* white, sometimes tinged with red; *petals* of the *outer ones* larger, radiate, unequal, expanding; those of the *central ones* equal, smaller, and incurved. *Fruit* (see figs. 4 & 5.) pale brown, " very curious; each *carpel* is hemispherical; on its inner and flat side having a projecting margin, which combines with the opposite one so as to leave no line or furrow between the two, and they form a complete little ball or globe; having, however, when quite ripe, 10 obscure elevated lines or ribs." (HOOKER.)

This plant is a native of corn-fields in the Levant, Tartary, Greece, Italy, and the South of France, and has, through being much cultivated in Essex, become naturalized in that county, and in a few other places in Britain. The fresh leaves, when bruised, have a very strong and disagreeable scent; the seeds also are strong and disagreeable when fresh, but they become sufficiently grateful by drying. They are used by the distillers for flavouring spirits; by the confectioner for incrusting with sugar; and by the druggist for various purposes. They are recommended as carminative and stomachic; they are also used to cover the taste of senna, and in spices as currie powder, and seasoning for black puddings; formerly they were steeped in wine, and then dried to render them milder. In some countries the leaves are used in soups and salads.

For information as to the culture of this plant, see YOUNG's *General View of the Agriculture of the County of Essex*, v. ii. p. 57 to 62.; LOUDON's *Encyclopædia of Agriculture ;* DON's *Gen. Syst. of Gard. and Bot.*, &c.

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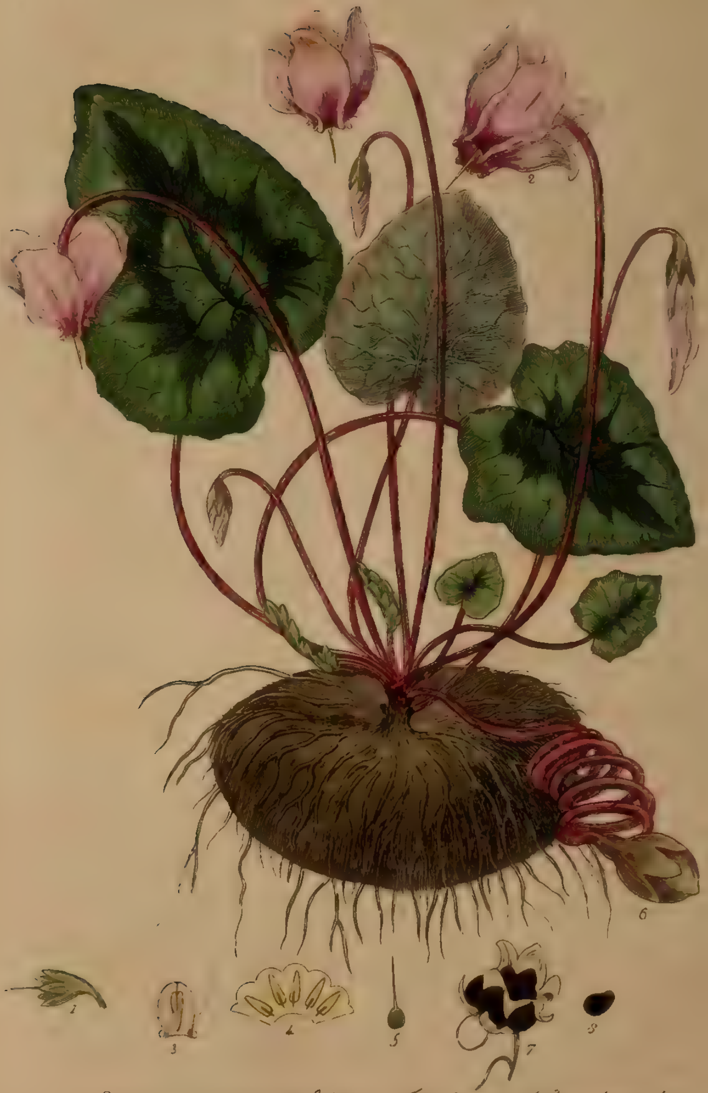

Cyclamen hederæfolium. Ivy-leaved Sow-bread. ♃

Russell Del. Pub.d by W. Baxter, Botanic Garden Oxford 1843 Mathews Sc.

CY'CLAMEN*.

Linnean Class and Order. PENTA'NDRIA †, MONOGY'NIA.

Natural Order. PRIMULA'CEÆ ‡, *Vent.*—Br. Prod. p. 427.—Lindl. Syn. p. 183.; Introd. to Nat. Syst. of Bot. p. 225.—Rich. by Macgilliv. p. 431.—Loud. Hort. Brit. p. 529.—Mack. Fl. Hibern. p. 192.—Hook. Br. Fl. (4th edit.) p. 415.—LYSIMACHIÆ; sect. 2. Juss. Gen. Pl. p. 95.—Sm. Gram. of Bot. p. 95.—SYRINGALES; subord. PRIMULOSÆ; sect. PRIMULINÆ; type, PRIMULACEÆ; subtype, PRIMULIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 958, 1020, 1024, & 1025.—ROTACEÆ, *Linn.*

GEN CHAR. *Calyx* (fig. 1.) inferior, bell-shaped, of 1 sepal, divided half way into 5 egg-shaped segments, permanent. *Corolla* (fig. 2.) of 1 petal, wheel-shaped; tube egg-shaped, longer than the calyx; mouth naked, prominent; limb much longer than the tube, in 5 deep, oblique, equal segments, which are reflexed upwards (see figs. 2 & 3). *Filaments* (fig. 4.) 5, very short, in the tube. *Anthers* straight, acute, converging, in the mouth of the corolla. *Germen* (fig. 5.) roundish. *Style* (see fig. 5.) cylindrical, straight, rather longer than the tips of the anthers. *Stigmas* simple. *Capsule* (see figs. 6 & 7.) globose, rather fleshy, of 1 cell, opening at the top with 5 teeth (see fig. 7). *Seeds* (see figs. 7 & 8.) numerous, somewhat egg-shaped, angular, covering a central, roundish egg-shaped, stalked, unconnected *placenta* or *receptacle.*

The superior, bell-shaped, 5-cleft *calyx;* the monopetalous, wheel-shaped *corolla*, with a naked, prominent mouth, and 5 reflexed segments; and the somewhat fleshy, 1-celled, many-seeded *capsule;* will distinguish this from other genera in the same class and order.

One species British.

CY'CLAMEN HEDERÆFO'LIUM. Ivy-leaved Cyclamen. Sowbread.

SPEC. CHAR. Leaves heart-shaped, angular, finely toothed; their ribs and foot-stalks roughish. Mouth of the Corolla toothed.

Ait. Hort. Kew. (1st edit.) v. i. p. 196.—Willd. Sp. Pl. v. i. pt II. p. 810.—Ait. Hort. Kew. (2nd edit.) v. i. p. 311.—Bot. Mag. t. 1001?—Sm. Comp. Fl. Brit. (3rd ed.) p. 35.; Engl. Fl. v. i. p. 273.—With. (7th ed.) v. ii. p. 291.—Lindl. Syn. p. 182.—Hook. Brit. Fl. p. 89.—Macr. Man. Brit. Bot. p. 191.—*Cyclamen Europæum*, Engl. Bot. t. 548.—Linn. Sp. Pl. p. 207.—Sym. Syn. p. 53.—Sm. Fl. Brit. v. i. p. 224.—With. (5th ed.) v. ii. p. 299.—*Cyclamen vernum*, Gray's Nat. Arr. v. ii. p. 303.—*Cyclamen neapolitanum*, Bot. Reg. N. S. (1838) t. 49?—Loud. Gard. Mag. v. xiv. p. 480?—*Cyclamen hederæ folio*, Bauh. Pin. p. 308.—Johnson's Gerarde, p. 843. f. 2.

LOCALITIES.—In woods and thickets; rare.—*Kent;* Growing in great abundance in a wood on Alderdown Farm, in the parish of Sandhurst, on a poor yellow sandy loam soil; Dec. 6, 1819. The flowers were red, white, and purple: Mr. W. Ross, in *Tr. Linn. Soc.* v. xiii. p. 616. In a coppice just before you enter the village of Sandhurst, on the Winchelsea road: 1831; Mr. W. PAMPLIN, in

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Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 3. A Segment of the Corolla, showing the situation of the stamens.—Fig. 4. Stamens, attached to the base of the tube of the corolla.—Fig. 5. Germen, Style, and Stigma.—Fig. 6. Unripe Capsule, with its spiral fruit-stalk.—Fig. 7. A ripe Capsule.—Fig. 8. A Seed.—*All of the natural size.*

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* Supposed from *cyclos*, Gr. a *circle;* from the root being round.

† See fol. 48, note †. ‡ See fol. 296, *a.*

N. B. G. Sandhurst: W. Christy, Esq. ibid. Near Sandhurst, in the woods on both sides of the road from Hawkhurst to Newenden: 1841; Mr. Edward Jenner, and Mr. Walter W. Reeves.—*Notts*; At Langar, near the seat of Earl Howe, plentifully, but yet doubtful as a native, (on the authority of Mr. Gregory): Rev. G. Crabbe, in B. G. This station does not appear to be confirmed by present Botanists: Mr. H. C. Watson, in N.B.G.—*Suffolk*; On a steep bank in the parish of Bromfield, on a wet clay soil: Mr. D. E. Davy, in *Sm. Fl. Brit.*—WALES. *Pembrokeshire*; "I found a large plant of it in the woods at Stockpole Court, but suspect it is not a native:" Mr. Milne, in B. G.

Perennial.—Flowers in April.

Root large, orbicular, compressed, brown, sending out many branched fibres. *Leaves* all radical, heart-shaped, angular, finely toothed; when full grown 3 inches and a half long, and 2 inches and a half broad, beautifully variegated with dark and glaucous green; their under side paler, purplish, with slightly glandular ribs. *Petioles (leaf-stalks)* from 3 to 6 inches long, cylindrical, minutely glandular; tapering and wavy at the base. Young leaves often much more distinctly lobed than the full-grown ones. *Flowers* handsome, pendulous, on naked wavy *stalks*, taller than the leaves. *Calyx* small, divided halfway into 5 egg-shaped segments. *Corolla* white or pale-pink; purplish about the mouth, which is distinctly toothed. *Stamens* very short, concealed within the corolla. After the flowers are over, the flower-stalks curl spirally (see fig. 6.), enclosing the germen in the centre, and, lowering it to the earth, repose on the surface of the soil till the seeds are ready to escape.—This beautiful and admirable process, says Mr. Denson, in *Gard. Mag.* v. vii. p. 563, is sufficient to suggest to the observant gardener that the seeds of Cyclamen require to be sown the moment they are ripe.

The root of this plant, in a recent state, (for when dried it is said to lose such properties,) is powerfully pungent and acrid, yet, notwithstanding this, it is the chief food of the wild boars of Sicily, where it abounds; hence its common name of Sow-bread.

The accompanying plate is from a very beautiful drawing by Mr. Isaac Russell, botanical draughtsman, and glass painter, of Oxford, from a specimen kindly communicated to me by Mr. Walter W. Reeves, of Farnham, Surrey, from its station near Sandhurst, Kent. I have also received fine living plants of it from my kind friend Mr. Edward Jenner, of Lewes, Sussex, taken up in the same locality, in November, 1841.

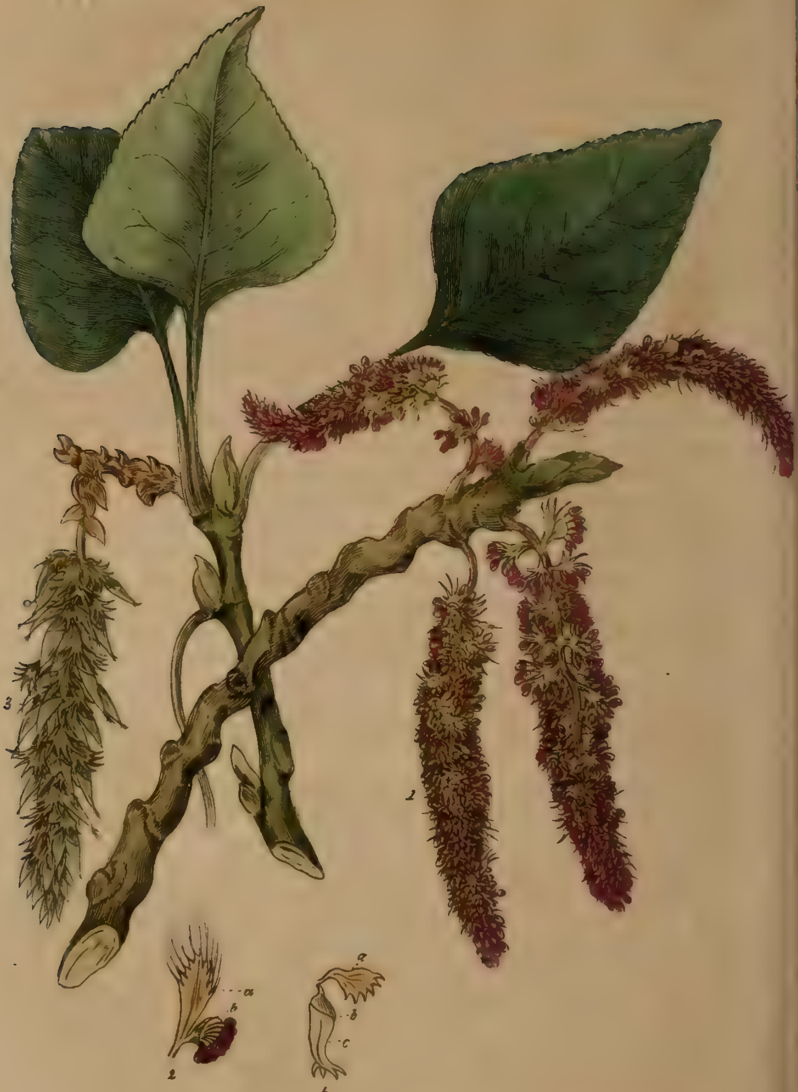
"In what delightful land
Sweet scented flower didst thou attain thy birth?
Thou art no offspring of the common earth,
By common breezes fann'd.

Thy beauty makes rejoice
My inmost heart; I know not how 'tis so,
Quick coming fancies thou dost make me know,
For fragrant is thy voice.

Thy home is in the wild,
'Mong sylvan shades near music haunted springs,
Where peace dwells all apart from earthly things,
Like some secluded child.

Thou bringst unto the soul
A blessing, and a peace inspiring thought,
And dost the goodness and the power denote,
Of Him who form'd the whole."

W. Anderson.



Populus nigra. Black Poplar. ♄

Rufsell Del. Pub^d by W. Baxter Botanic Garden Oxford 1843 Mathews Sc

PO′PULUS[*].

Linnean Class and Order. Diœ′cia[†], Octa′ndria[‡].

Natural Order. Salicineæ[§], Rich. by Macgilliv. p. 543.—Lindl. Intr. to Nat. Syst. p. 98.—Salica′ceæ, Loud. Arboret. et Frutic. Brit. v. iii. p. 1453.—Amenta′ceæ, *Linn.*—Juss. Gen. Pl. p. 407.—Sm. Gram. of Bot. p. 189.—Lindl. Syn. p. 228.—Loud. Hort. Brit. p. 534.—Mack. Fl. Hibern. p. 242.—Hook. Brit. Fl. (4th edit.) p. 419—Querneales; sect. Quercinæ; type, Salicaceæ; Burn. Outl. of Bot. pp. 523 & 526.

Gen. Char. *Sterile Flowers. Catkin* (fig. 1.) oblong, cylindrical, loosely imbricated every way, many-flowered. *Calyx* (fig. 2, *a.*) a single-flowered, wedge-shaped, flat *scale*, unequally jagged at the summit. *Corolla* (fig. 2, *b.*) of 1 petal; turbinate and tubular below; dilated, undivided, obliquely cup-shaped in the border. *Filaments* (see fig. 2.) 8, or more, hair-like, very short. *Anthers* drooping, large, quadrangular.—*Fertile Flowers. Calyx, Corolla,* and *Catkin*, as in the sterile flower (see fig. 4, *a*, and *b*). *Germen* (fig. 4, *c.*) superior, egg-shaped, pointed. *Style* none. *Stigmas* 4 or 8, awl-shaped. *Capsule* egg-shaped, of 2 concave valves, and 1 cell. *Seeds* numerous, small, egg-shaped, each crowned with a tuft of fine hairs.

The imbricated *catkin;* the jagged *scale* of the *calyx;* the turbinate, oblique, undivided *corolla*, of both *sterile* and *fertile flowers.* The 4 or 8 *stigmas;* the superior, 1-celled, 2-valved *capsule;* and the tufted *seeds*, of the *fertile flowers;* will distinguish this from other genera in the same class and order.

Four species British.

PO′PULUS NIGRA. Black Poplar. Old English Poplar. Willow Poplar. Water Poplar.

Spec. Char. Leaves deltoid or trowel-shaped, pointed, serrated, smooth on both sides. Fertile Catkins cylindrical, loose. Stigmas four.

Engl. Bot. t. 1910.—Johnson's Gerarde, p. 1486. f. 2.—Park. Theatr. Bot. p. 1410. f. 3.—Bauh. Hist. v. i. pt. II. p. 155. with a figure.—Ray's Syn. p. 446.—Linn. Sp. Pl. p. 1464.—Huds. Fl. Angl. (2nd ed.) p. 434.—Willd. Sp. Pl. v. iv. pt. II. p. 804.—Sm. Fl. Brit. v. iii. p. 1081.; Engl. Fl. v. iv. p. 245.—With. (7th edit.) v. ii. p. 488.—Gray's Nat. Arr. v. ii. p. 243.—Lindl. Syn. p. 238.—Hook. Brit. Fl p. 437.; ibid. 5th edit. p. 325.—Macr. Man. Brit. Bot. p. 215.—Hunt. Evel. Sylva. p. 208. n. 2.—Loud. Arb. et Frutic. Brit, v. iii. p. 1652. fig. 1513.; and v. vii. t 219, 220, & 221.; Encycl. of Trees and Shrubs, p. 824. f. 1498.—Lightf. Fl. Scot. v. ii. p. 618.—Davies' Welsh Bot. p. 95.—Sibth. Fl. Oxon. p. 126.—Abb. Fl. Bedf. p. 215.—Purt. Midl. Fl. v. ii. p. 480.—Relh. Fl. Cant. (3rd edit.) p. 409.—Hook. Fl. Scot. p. 289.—Grev. Fl. Edin. p. 210.—Fl. Devon. pp. 160 and

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Fig. 1. Sterile Catkin.—Fig. 2. A separate Flower of ditto; *a.* the Scale, or Calyx; *b.* the Corolla.—Fig. 3. A fertile Catkin.—Fig. 4. A separate Flower of ditto; *a.* the Scale; *b.* the Corolla; *c.* the Germen.

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[*] *Populus*, or the *tree of the people*, as it was esteemed to be in the time of the Romans, and of the French revolution. Hooker.

[†] See fol. 143, note †.

[‡] See fol. 42, note †.

[§] See fol. 434, *a*.

135.—Johnst. Fl. of Berw. v. i. p. 220.—Winch's Fl. of Northumber. and Durh. p. 64.—Walker's Fl. of Oxf. p. 297.—Bab. Fl. Bath, p. 46.—Irv. Lond. Fl. p. 115. —Cow. Fl. Guide, p. 42.—Leight. Fl. of Shropsh. p. 495.—Gulliv. Pl. of Banbury, p. 20.—Beesley's Hist. of Banbury, p. 588.—Mack. Catal. Pl. of Irel. p. 86. ; Fl. Hibern. p. 254.

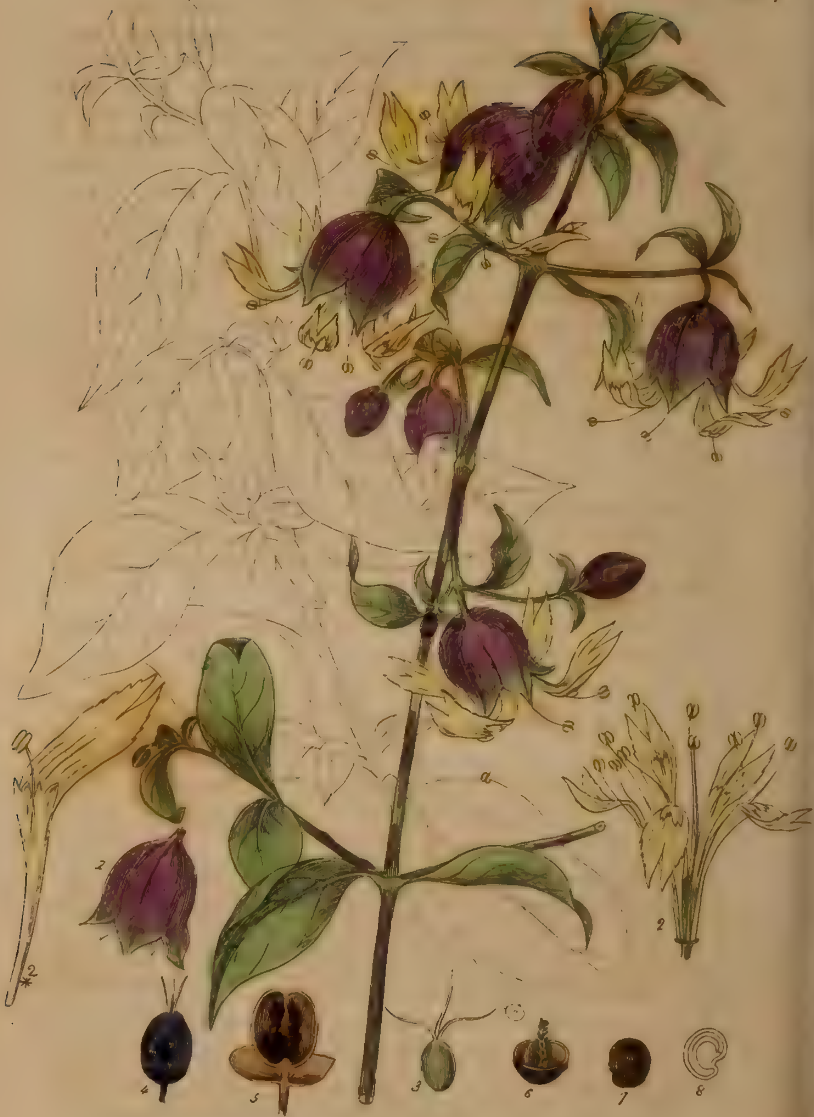
Localities.—In moist woods, and about the banks of rivers.

Tree.—Flowers in March.

A large *tree*, with an ample head, composed of numerous branches and terminal shoots. *Wood* tough, and close grained. *Bark* thick, blackish, somewhat spongy, becoming rough and deeply furrowed with age. *Branches* smooth; rarely hairy when young. *Leaves* on yellowish, somewhat compressed petioles; deltoid, or unequally quadrangular, pointed, serrated, the base more entire, very smooth, deep green, the under side palest. *Catkins* all loose and drooping, 3 or 4 inches long, appearing before the leaves, in March and April; those of the sterile trees are of a dark red, and, being produced in abundance, have a very striking effect. *Stamens* 8, scarcely more with us, though Linnæus and Leers describe 16. *Germen* in the *fertile flower* egg-shaped, but slender, closely sheathed at the base only with the regular cup-like corolla. *Stigmas* 4, awl-shaped, simple, moderately spreading, reddish. *Capsule* roundish, inclosing the *seeds*, which are enveloped in a beautiful white cotton, by which, when the capsule opens, they are disseminated to a great distance by the winds.

This tree is a native of Europe, from Sweden to Italy. It is found also in the north of Africa. In a natural state, the leaves and young shoots are eaten by cattle, and the wood by beavers. The bark, in Russia, is used for preparing morocco leather; and, when it is pulverized it is eaten by sheep. In Britain, it is used, like that of the oak, for tanning leather. The bark of the old trunk, being very thick, light, and corky, is employed by fishermen to support their nets, and, it is said, is used as corks for bottles. In Kamschatka, and in Norway, the poor inhabitants are sometimes reduced to the necessity of drying the inner bark, and grinding it, in order to mix it with their oatmeal. The wood is light, soft, and not apt to splinter, and is used by the turner, and in particular by the bellows-maker, it being very close and light. It is incomparable, according to Evelyn, for all sorts of white wooden vessels, as trays, bowls, and other turner's ware. It is also used for making clogs, and for the soles, as well as heels, of shoes. Like all the other kinds of Poplar, the wood is bad for fuel, as it rather roasts away than burns, giving a great deal of smoke, but no flame. On this account it is considered as excellent for building of cottages, stables, &c.; and also for flooring, as the boards are so slow in taking fire, that the flames are said to have been stopped at that part of a building on fire, where this timber had been used. The buds, macerated in boiling water, and afterwards bruised in a mortar and pressed, yield a fat substance, which burns like wax, and exhales a fine odour. Brooms are made of the twigs, and in some places sheep are fed upon the dried leaves in winter. From the cottony down, which envelopes the seeds, paper and cloth have been manufactured.

The red substances, like berries, upon the leaves and leaf-stalks, as large as a cherry, bulging on one side, and gaping on the other, are occasioned by an insect, the *Apis Populi.*—*Erysiphe adunca; Uredo Populi;* and *Erineum Populinum;* three minute parasitic fungi, are common on the living leaves of this species of Poplar about Oxford in the summer: and, later in the season, on the dry fallen leaves, may be found *Sphæria ceuthocarpa,* of Frie's, *Xyloma populinum*, of Persoon, in abundance.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Cucubalus baccifer. Berry-bearing Campion. ♃

Mathews Del & Sc   Pub^d by W Baxter Botanic Garden Oxford 1843

CUCU'BALUS*.

Linnean Class and Order. DECA'NDRIA†, TRIGY'NIA.

Natural Order. CARYOPHY'LLEÆ‡, *Linn.*—Juss. Gen. Pl. p. 299.—Sm. Gram. of Bot. p. 159.—Lindl. Syn. p. 43.; Introd. to Nat. Syst. of Bot. p. 156.—Rich. by Macgilliv. p. 507.—Loud. Hort. Brit. p. 501.—Don's Gen. Syst. of Gard. and Bot. vol. i. p. 379.—Mack. Fl. Hibern. p. 40.—Hook. Brit. Fl. (4th ed.) p. 400.—ROSALES; subord. RHŒADOSÆ; sect. DIANTHINÆ; type, DIANTHACEÆ; Burn. Outl. of Bot. v. ii. pp. 614, 784, 805, & 807.

GEN. CHAR. *Calyx* (fig. 1.) inferior, of 1 sepal, bell-shaped, with 5 teeth, naked, permanent. *Corolla* (see fig. 2.) of 5 spreading petals, with long, narrow claws, dilated upwards, attached to the receptacle, crowned in the throat with as many bifid scales (see fig. 2*.); limb flat, bifid. *Filaments* (see fig. 2.) 10, awl-shaped, 5 alternate ones attached to the petals, and rather later than the other 5. *Anthers* roundish. *Germen* (see fig. 3.) oval. *Styles* (see fig. 3.) 3, short. *Stigmas* oblong, downy along the upper or inner side. *Capsule* (fig. 4.) fleshy, resembling a berry, of 1 cell. *Seeds* (see figs. 5, 7, & 8.) numerous, kidney-shaped, roughish, attached to the central *receptacle* or *placenta* (see figs. 5 and 6).

The monosepalous, inferior, bell-shaped, 5-toothed, naked *calyx;* the *corolla* of 5 petals, each with a long narrow claw, and a bifid limb; and the fleshy, 1-celled *capsule;* will distinguish this from other genera in the same class and order.

It differs from *Silene* (t. 120.) in the fruit being a black berry.

Only one species known.

CUCU'BALUS BA'CCIFER. Berry-bearing Spatling Poppy. Berry-bearing Campion. Berry-bearing Chickweed.

SPEC. CHAR.

CUCUBALUS BACCIFER, Gertn. v. i. p. 376. t. 77. f. 7.—Engl. Bot. t. 1577.—Sm. Fl. Brit. v. ii. p 464.—Davies' Welsh Bot. p. 41.—Don's Gen. Syst. of Gard. and Bot. v. i. p. 398.—*Cucubalus bacciferus*, Linn. Sp. Pl. p. 591.—Huds. Fl. Angl. (2nd ed.) p. 185.—Robson's Brit. Fl. p. 101.—With 1st edit. v. i. p. 259; ibid. 5th edit. v. ii. p. 507.—Gray's Nat. Arr. v. ii. p. 645.—Decand. Prod. v. i. p. 367.—Macr. Man. Brit. Bot. p. 29.—*Cucubalus Plinii*, Dalech. Hist. p. 1429.—Tourn. Inst. p. 339.—Dill. in Ray's Syn. p. 267.—Mill. Icon. t. 112.—*Silene baccifera*, With. (2nd ed.) v. i. p. 452.—Willd. Sp. Pl. v. ii. pt. I. p. 700.—*Silene fissa*, Salisb, Prod. p. 302.—*Alsine baccifera*, Johnson's Gerarde, p. 614. f. 13.—*Alsine repens baccifera*, Park. Theatr. Bot. p. 759. f. 1.—*Alsine scandens baccifera*, Bauh. Pin. p. 250.—*Recentiorum planta*, *Alsines majoris faciæ baccis solani*, Moris. Hist. v. ii. p. 5. sect. 1. t. i. f. 7.

Fig. 1. Calyx.—Fig. 2. Corolla.—Fig. 2*. A separate Petal.—Fig. 3. Germen, Styles, and Stigmas.—Fig. 4. A Berry.—Fig 5. Vertical Section of a Berry.—Fig. 6. A transverse section of ditto, showing the central Placenta.—Fig. 7. A Seed.—Fig. 8. A Seed with the Testa removed, showing the curved Embryo.

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* Altered from *Cacóbolus*, which is derived from *kakos*. Gr. *bad;* and *bole*. Gr. a *shoot* or *sprig;* that is to say, a plant destructive of the soil, a bad plant, a weed. DON.

† See folio 37, note †.

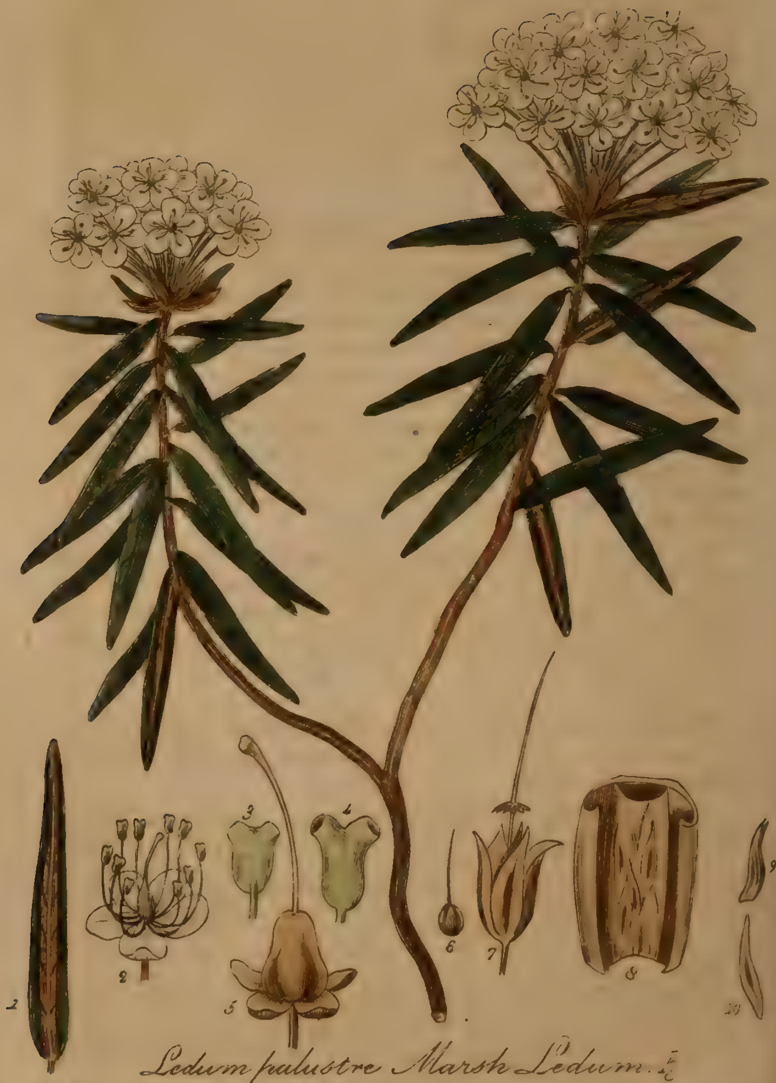
‡ See folio 152, *a*.

LOCALITIES.—In hedges, and shady places; very rare.—*Essex;* "In the margin of my copy of Ray's Synopsis, against *Cucubalus Plinii (C. baccifer)*, a former possessor of the book has written as a habitat, *Springfield.* From the colour of the ink and style of writing, it is evident this entry was made soon after the Dillenian edition of the Synopsis appeared. Perhaps some of your readers, on seeing this note, will search in the neighbourhood of Springfield for this plant, which may very readily have been overlooked." H. O. STEPHENS, in *The Phytologist*, v. i. p 295.—*Middlesex;* "In the Isle of Dogs, on the banks of the ditch on the left-hand of the road from Blackwall to the Ferry-House; and there, if not truly indigenous, it is at least perfectly naturalized. I also feel convinced that I have met with it in similar situations in other parts of England; but the plant not being in flower, I have passed it, as I did the first time I saw it in the Isle of Dogs, thinking it to be merely *Cerastium aquaticum*, which in that state it much resembles. It is probable that, like *Polygonum dumetorum*, this plant only requires to have the attention of Botanists directed to it, to lead to its discovery in other localities." Mr. G. LUXFORD, in Tr. of Linn. Soc. v. xviii. p. 687. See also, "The Phytologist," v. i. p. 255.—WALES. *Anglesea;* Gathered in hedges in Anglesea, and communicated to Dr. RICHARDSON: *Dillenius*, in *Ray's Syn.* The Rev. HUGH DAVIES, who was well acquainted with the botany of Anglesea, could never find it there.—SCOTLAND. In hedges in the *Isle of Man:* Mr. ROBSON.—*Edinburghshire;* "Notwithstanding Sir J. E. SMITH has rejected this plant as not being of British origin, (see Eng. Fl. v. ii. p. 290), we have seen it growing plentifully along with *Silene inflata*, by hedge sides, not far from Roslin Castle near Edinburgh, in the year 1817:" Mr. G. DON, in *Gen. Syst. of Gard. and Bot.* v. i. p. 398.

Perennial.—Flowers in May, June, and July.

Root creeping. *Stems* from 2 to 5 feet, or more, long, weak and straggling, leafy, cylindrical, hollow, somewhat hairy, much branched; *branches* opposite at each joint, horizontal or reclining downwards. *Leaves* opposite, on short petioles, egg-spear-shaped, entire, downy. *Flowers* axillary and terminal, drooping, solitary, on slender, downy peduncles (flower-stalks). *Calyx* large, bell-shaped, downy, thin, permanent, frequently tinged with purple. *Corolla* greenish-white, or cream-coloured; *petals* distant, spreading, cloven; claws very narrow, generally more or less crowned at the mouth, but in that respect they vary. *Stamens* inserted into the petals, and the receptacle alternately. *Fruit* an oval, fleshy *capsule*, resembling a berry, very black when ripe, smooth and shining, with one cell, and many seeds. *Seeds* shining, wrinkled, kidney-shaped, blackish.

This plant is a native of Germany, Flanders, France, Switzerland, Carniola, Italy, and Spain, in woods and hedges. Sir J. E. SMITH admitted it into his *Flora Britannica*, and his *English Botany*, on the authority of DILLENIUS'S edition of *Ray's Synopsis;* but as no one had observed it afterwards up to the time of the publication of his *English Flora*, he considered himself under the necessity of excluding it from that work. Its discovery, however, in the localities above cited seems to give it a claim to a place in this work. JOHNSON, in *Gerarde's Herbal*, as long ago as 1633, speaks of it as being wild in England, but he had himself only seen it in a garden; and PARKINSON (in 1640) says, in his *Theatrum Botanicum*, p. 760, "I have sometimes found it by hedge sides in our own Land."—The berries are said to be poisonous.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Ledum palustre Marsh Ledum. ħ

Russell Del. Pub.d by W. Baxter, Botanic Garden Oxford, 1843 Mottram S.

LE'DUM[*].

Linnean Class and Order. DECA'NDRIA[†], MONOGY'NIA.

Natural Order. ERI'CEÆ[‡], *Brown's* Prod. p. 557.—Lindl. Syn. p. 172; Introd. to Nat. Syst. of Bot. p. 182.—Loud. Hort. Brit. p. 523.—Mack. Fl. Hibern. p. 179.—Hook. Brit. Fl. (4th ed.) p. 411.—ERICA'CEÆ; tribe, RHODO'REÆ, Don's Gen. Syst. of Gard. and Bot. v. iii. pp. 785 and 788.—Loud. Arb. et Frutic. Brit. pp. 1076 and 1078.—ERICINEÆ, Rich. by Macgilliv. p. 450.—ERICÆ, Juss. Gen. Pl. p. 159.—Sm. Gram. of Bot. p. 115.—SYRINGALES; subord. ERICOSÆ; sect. ERICINÆ; type, ERICACEÆ; subtype, ERICIDÆ; Burn. Outl. of Bot. v. ii. pp. 900, 937, 944, 946, and 948.—BICORNES, *Linn.*

GEN. CHAR. *Calyx* (see fig. 5.) inferior, very small, of 1 sepal, in 5 egg-shaped, spreading segments. *Corolla* (see fig. 2.) of 5 spreading, egg-shaped, concave, rounded petals. *Filaments* (see fig. 2.) from 5 to 10, thread-shaped, spreading, the length of the corolla. *Anthers* (see figs. 2, 3, & 4.) oblong, roundish at the base, opening by 2 terminal pores. *Germen* (see fig. 2.) egg-shaped. *Style* (see figs. 2 & 5.) thread-shaped, as long as the stamens. *Stigma* blunt. *Capsule* (see figs. 5, 6, & 7.) roundish or somewhat egg-shaped, of 5 cells, and 5 valves, the dissepiments formed by the inflexed margins of the valves, opening from the base and between the dissepiments. *Seeds* (see figs. 8 & 10.) numerous, flat, strap-shaped, roughish, furnished with a membranous wing at each extremity.

The minute, 5-toothed *calyx;* the 5-petaled *corolla*; the *anthers* opening by 2 terminal pores; the 5-celled, 5-valved, many-seeded *capsule*, opening at the base; and the flat, strap-shaped *seeds*, covered with a pellucid membrane or arillus; will distinguish this from other genera in the same class and order.

One species British ?

LE'DUM PALU'STRE. Marsh Ledum. Marsh Wild-Rosmary.

SPEC. CHAR. Leaves strap-shaped, revolute at the margin, downy beneath. Stamens 10.

Hook. Fl. Lond. folio 210. t. 212.—Fl. Dan. t. 1031.—Lodd. Bot. Cab. t. 560.—Linn. Sp. Pl. p. 561.; Fl. Suec. p. 135.; Fl. Lapp. (2nd edit.) p. 127.—Willd. Sp. Pl. v. ii. pt. I. p. 602.—Ait. Hort. Kew. 1st edit. v. ii. p. 65.; ibid. 2nd edit. v. iii. p, 48.—Pursh. Fl. Amer. Sept. v. i. p. 300.—With. (7th ed.) v. ii. p. 520.—Lindl. Syn. p. 173.—Hook. Brit. Fl. p. 187.—Macr. Man. Brit. Bot. p. 152.—Don's Gen. Syst. of Gard. and Bot. v. iii. p. 851.—Loud. Arb. et Frutic. Brit. v. ii. p. 1155. f. 966; Encycl. of Trees and Shrubs, p. 603. f. 1150.—*Lédum Sile-*

Fig. 1. A Leaf seen from the under side.—Fig. 2. A Flower.—Fig. 3. Back view of a Stamen.—Fig. 4. Front view of a Stamen.—Fig. 5. Calyx and Pistil.—Fig. 6. Capsule (*nat. size*).—Fig. 7. Capsule separating with its valves.—Fig. 8. Portion of a valve, to show the receptacle of the Seeds.—Fig. 9. A single Valve.—Fig. 10. A Seed.—*All*, except fig. 6. *more or less magnified.*—Sections from the "Flora Londinensis."

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[*] From the similarity of its foliage to that of the *Cistus Ledum.*

[†] See folio 37, note †.

[‡] See folio 449, *a.*

siacum, Clus. Pann. p. 68.—Park. Theatr Bot. p. 75. f. 5.—*Rosmarinum sylvestre*, Cam. Epit. p. 546.—Park. Theatr. Bot. p. 75 f. 5.—*Cistus Ledon foliis rorismarini ferrugineis*, Bauh. Pinn. p. 467.—*Cistus Ledum Silesiacum*, Johnson's Gerarde, p. 1288. f. 11.—*Cistus Ledum Rorismarini folio*, Johnson's Gerarde, p. 1289. f. 12.

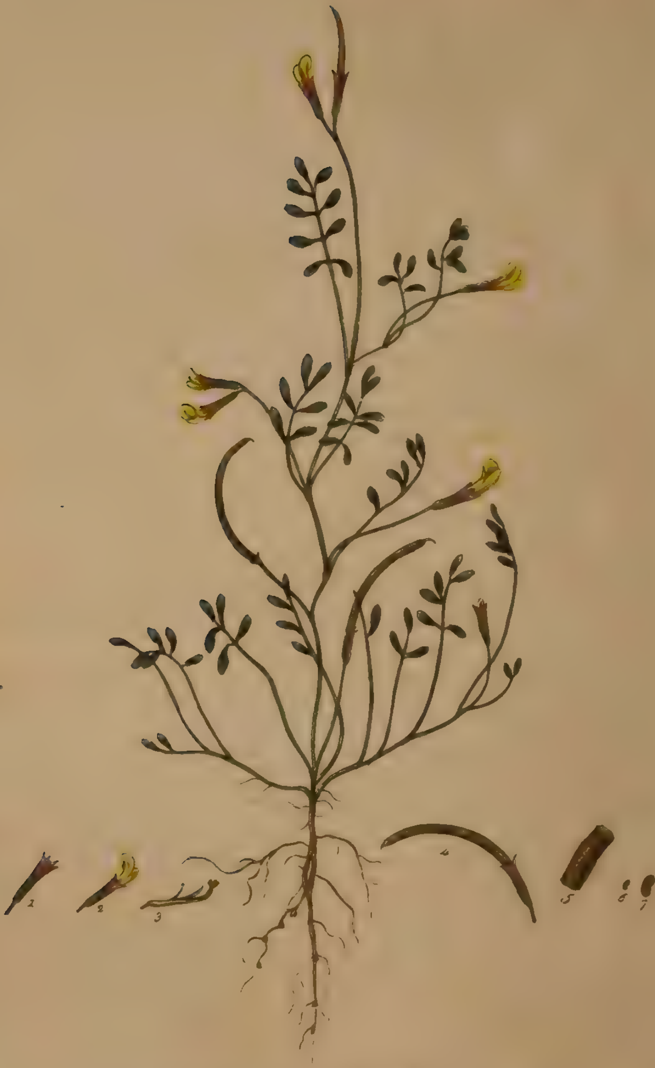
Localities.—In marshy places; a very doubtful native.—IRELAND. " Detected by Sir Charles Giesecke, Professor of Mineralogy in the University of Dublin, on the north-west of Ireland, where it seems to be a denizen along with *Papaver nudicaule;* for, in the immediate neighbourhood of the station for that plant, namely, Archilhead, Professor Giesecke took the specimen," figured in the Flora Londinensis, " in a fresh state, from the hat of a fisherman. The fact of the plant growing amongst the wild islands of that coast cannot be doubted. In the more northern regions, too, of Europe and America, these two plants are almost always found together." Sir W. J. Hooker, in *Fl. Lond.*

Shrub.—Flowers from April to July.

Root branched, woody, running widely and deeply into the ground. *Stems* shrubby, somewhat decumbent, slender, from 1 to 3 feet high, branched, smooth, the younger branches only being covered with a close, rust-coloured down. *Leaves* principally in the younger branches, scattered, horizontal or reflexed, on short petioles, strap-shaped, quite entire, with revolute margins; channelled, smooth, and of a dark green on the upper surface; paler on the under, the mid-rib clothed with close, rust-coloured down; the younger leaves upright, very downy. *Flowers* terminal, corymbose, numerous, on long, simple, upright, or somewhat spreading, pubescent pedicels, with egg-shaped, membranous, brown bracteas at their base, which are at first pubescent, soon clothed with reddish down, and at length nearly smooth. *Calyx* (see fig. 5.) small, permanent, 5-cleft, the segments egg-shaped, spreading, externally downy. *Corolla* (fig. 2.) white, of 5 egg-shaped, spreading, rather concave, nerved petals. *Stamens* (see fig. 2.) 10; *filaments* long, decumbent at the base, afterwards upright, pale purple, longer than the corolla; *anthers* (figs. 3 & 4.) oblong, roundish at the base, bluntly emarginate at the apex, and there opening with a pore on each side. *Germen* egg-shaped; *style* thread-shaped, smooth; *stigma* small. *Capsule* (figs. 5, 6, & 7.) oval, drooping, of 5 cells, and 5 valves. *Seeds* (fig. 10.) very minute, oblong, covered with a pellucid membrane or arillus. See *Fl. Lond.*

This is a small, pretty, evergreen shrub, with leaves resembling those of Rosmary. It is a native of Canada, in swamps, and round the mountain lakes of New York; in Kotzebue's Sound, &c.; also of the north of Europe, as of Denmark, Silesia, &c. Its claim to a place in this work is very slight, as it rests on the authority of only a single specimen having been detected in Ireland, as recorded above, for I have never heard of its having been found in a wild state in any part of Great Britain or Ireland since. It is omitted in the 4th and 5th editions of "The British Flora" by Sir W. J. Hooker, but, as it had previously been described and figured by that eminent Botanist, in the new series of the "Flora Londinensis," and afterwards admitted into the 7th edition of Dr. Withering's "Arrangement of British Plants;" and also into the 1st and 2nd editions of Dr. Lindley's "Synopsis of the British Flora;" as well as into the 1st edition of Sir W. J. Hooker's "British Flora;" I have ventured to introduce a figure and description of it here, in hope that some future Botanist may be fortunate enough to meet with it again, either in the station recorded for it above, or in some other locality in that part of the coast of Ireland.

The leaves of this plant are used as a substitute for tea by the Canadians in their hunting excursions; and by the Norwegians it is called *Finne-thè*, or tea of the Laplanders. It is sometimes substituted for hops; or placed among corn to drive away mice, and to destroy vermin on sheep and oxen.



Arthrolobium ebracteatum Sand joint-vetch. ⊙

Ruſsell Del. Pub.d by W. Baxter Botanic Garden Oxford 1843 Mathews Sc.

ARTHROLO'BIUM *.

Linnean Class and Order. Diade'lphia †, Deca'ndria.

Natural Order. Legumino'sæ ‡, Juss. Gen. Pl. p. 345.—Sm. Gram. of Bot. p. 174.—Lindl. Syn. p. 75.; Introd. to Nat. Syst. of Bot. p. 87.—Rich by Macgilliv. p. 532.—Sm. Engl. Fl. v. iii. p. 259.—Loud. Hort. Brit. p. 509.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 91.—Hook. Brit. Fl. (4th edit.) p. 404.—Mack. Fl. Hib. p. 73.—Legumina'ceæ, Loud. Arb. Brit. p. 561.—Papiliona'ceæ §, *Linn.*—Rosales; sect. Cicerinæ; subsect. Lotianæ; type, Lotaceæ; subtype, Hedysaridæ; Burn. Outl. of Bot. pp. 614, 638, 642, & 657.

Gen. Char. *Calyx* (fig. 1.) without bracteas, inferior, tubular, permanent; the margin in 5, nearly equal, teeth. *Corolla* (see fig. 2.) papilionaceous, of 5 petals; standard inversely egg-shaped, ascending; wings rather smaller, oblong, curved upwards; keel very small, compressed, of 2 converging petals, with slender distinct claws. *Filaments* (see fig. 3.) 10, 9 in one compressed tube, slit along the upper edge; the tenth hair-like, distinct; all curved upward at the extremity. *Anthers* very small, roundish. *Germen* strap-shaped, compressed. *Style* slender, ascending. *Stigma* capitate, naked. *Legume* (fig. 4.) cylindrical, more or less curved, constantly composed of numerous 1-seeded, indehiscent, cylindrical joints, which are truncate at both ends (see fig. 5). *Seeds* (figs. 6 and 7.) very small, kidney-shaped. *Flowers* yellow, capitate, without a bractea.

Distinguished from other genera, with a smooth *stigma*, in the same class and order, by the very small *keel;* and the cylindrical, curved *legume*, of numerous close single-seeded, indehiscent joints, which are truncate at each end.

Differs from *Ornithopus* (t. 358.) in the flowers being destitute of bracteas; and in the legume being cylindrical, and the joints nearly obsolete.

One species British.

ARTHROLO'BIUM EBRACTEA'TUM. Bractless Joint-vetch. Smooth Bird's-foot. Sand Joint-vetch.

Spec. Char. Stem filiform. Stipulas very minute. Leaves all pinnate; with many pairs of equal elliptic-oblong leaflets, the lower ones remote from the stem. Peduncles about equal in length to the leaves, from 1- to 4-flowered.

Arthrolobium ebracteatum, Engl. Bot. Suppl. t. 2844. (*fide* Hooker).—Bab. Prim. Fl. Sarn. p. 29.—Hook. Brit. Fl. 4th ed. p. 273.; 5th ed. p. 86.—Loud. First Add. Suppl. to Encycl. of Pl. p. 1284.—*Astrolóbium ebracteátum*, De Cand. Prod.

Fig. 1. Calyx.—Fig. 2. Calyx and Corolla.—Fig. 3. Stamens and Pistil.—Fig. 4. Legume.—Fig. 5. A single joint of the Legume.—Figs. 6 & 7. Seeds.—*All*, except figs. 4 & 6, *a little magnified.*—Figs. 4 to 7, from specimens in the Sherardian Herbarium.

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* From *arthros*, Gr. a *joint;* and *lobos*, Gr. a *pod;* from the jointed character of the *seed-vessel.*

† See fol. 77, note †. ‡ See fol. 495, *a.* § See fol. 117, note ‡.

v. ii. p. 311.—Don's Gen. Syst. of Gard. and Bot. v. ii. p. 276 —*Ornithopus ebracteátus*, Brot. Fl. Lus. v. ii. p. 159.—Loisel. Fl. Gall. v. ii. p. 164. t. 13.—*O. lævigátus*, Sm. in Rees' Cycl., N^o. 6.—*O. extipulátus*, Thore, Chl. Land. p. 311.—*O. nudiflórus*, Lag. Varied. Esp. v. ii. p. 40.—*O. durus*, De Cand. Fl. Fr. v. iv. p. 603. N. 4039,, but not of Cavanilles.—*O. pygmæ'us*, Viv.—Dalech. Hist. v. i. p. 487. f. 1·—*Ornithopodium minimum ὀλιγοκέρατον* Moris. Hist. Oxon. v. ii. p. 125. sect. 2. t. 10. f. 14?—*Ornithopodium glabrum fl. luteo*, Sherardian Herbarium.

Localities.—On sandy ground near Grand Havre, in the *Island of Guernsey.*—On the sea slope of Essex Castle Hill, and on the south coast near Chaise à l'Emauve, *Alderney:* C. C. Babington, Esq.—In the *Scilly Isles:* Miss Young, in *Hook. Brit. Fl.*

Annual.—Flowers in July and August.

Root slender, branched, fibrous, usually furnished with small tubercles. *Stems* several, ascending or decumbent, from 3 to 6 or 8 inches long, slender, simple, cylindrical, striated, leafy, smooth, sometimes zigzag. *Leaves* alternate, all pinnated; *leaflets* opposite, from 3 to 5 pairs, or more, with an odd terminal one, elliptic-oblong, or somewhat inversely egg-shaped, pointed, smooth on the upper side; the under side, as well as the petiole, clothed with a few scattered, white hairs; the lower pair of leaflets remote from the stem. *Stipulas* very minute. *Peduncles (flower-stalks)* about equal in length to the leaves, axillary, thread-shaped, slender, slightly hairy. *Flowers* yellow, from 1 to 3 together at the summit of the peduncle, and without any bractea. *Calyx* slender, tubular, 5-toothed, smooth. *Corolla* very small, about half as long again as the calyx. *Legumes* (fig. 4.) from about three quarters of an inch to an inch long, more or less curved, slender, cylindrical, so even that the joints are hardly discernible, its surface minutely reticulated, without hairs or downiness. *Seeds* small, one in each joint.

This curious little plant, which appears to have been unknown to Linnæus, is a native of Portugal, Spain, the South of France, and Italy, in sandy and gravelly places. It was, I believe, first published as a native of Britain, by Sir W. J. Hooker, in 1838, in the 4th edition of his excellent "British Flora," on the authority of Mr. Babington and Mr. Christy, who, a short time previous to the publication of that work, had found it in a wild state in the Islands of Guernsey and Alderney. The late Sir J. E. Smith, in his account of this plant in Rees' Cyclopædia, says it was "gathered by the Abbé Durand at Gibraltar;" and that he had "received it from Jaquin's Herbarium for *Ornithopus perpusillus*, with which many Botanists seemed to have confounded it; yet," continues Sir James, "the plants are totally distinct." That this is the case, will be really seen by comparing the above description with that of *Ornithopus perpusillus*, at folio 358, of this work.

The drawing for the accompanying plate was made from a specimen gathered by Mr. Christy, in Guernsey, in 1837, and kindly lent to me from the Herbarium of the Botanical Society of London.

ADDITIONS and CORRECTIONS.

Descriptions of the following Natural Orders were omitted in their proper places.

Verbena'ceæ, see folio 26.

This order is composed of dicotyledonous *trees* or *shrubs*, or *herbaceous* plants, with generally opposite, simple or compound *leaves*, without stipulæ. Their *flowers* are either in opposite corymbs, or spiked alternately; sometimes in dense heads; very seldom axillary and solitary. The *calyx* is tubular, and permanent. The *corolla* monopetalous; with an elongated *tube;* and an irregular 4- or 5-lobed *limb.* The *stamens* are usually 4, and didynamous, sometimes only 2. The *ovary* is 2- or 4-celled, and 2- or 4-seeded, with a single *style*, terminated by an entire or bifid *stigma.* The *fruit* is a berry or drupe, containing a nut with 2 or 4 cells, which are often 1-seeded. The *seeds* are upright, with a straight *embryo*, and very little or no *albumen.*—Verbena, t. 26, is the only British genus in the order.

Araliaceæ, *Juss.*—Loud. Hort. Brit. p. 519.—Hook. Brit. Fl. (4th ed.) p. 408.—Lindl. Syn. (2nd ed.) p. 321.

The plants of this order are nearly allied to the *Umbelliferæ.* They are either *Trees, Shrubs*, or *Herbs.* Their *calyx* is adherent to the ovary, and is entire or cleft. Their *petals* are 4, 5, 10, or none. The *stamens* are equal in number to the petals, or twice as many. The *ovary* is 2- or more-celled, with the same number of *styles*, terminated by simple *stigmas.* The *fruit* is fleshy or dry, of several 1-seeded cells. The *seed* is solitary and pendulous, with a minute *embryo*, and fleshy *albumen.*—Adoxa, t. 42; and Hedera, t. 32, are now referred to this order, from Saxifrageæ and Caprifoliaceæ.

Aroi'deæ, *Juss.*—See folio 261.

This order is composed of monocotyledonous, *herbaceous herbs* or *shrubs.* Their *leaves* are sheathing at the base, either with parallel or branching veins; sometimes compound, often heart-shaped. Their *flowers* are unisexual, and arranged upon a spadix (see t. 261. f. 1. *d.*), which is usually enclosed in a *spatha*, as in Arum, t. 261, or frequently naked, as in Acorus, t. 330. The *perianthium* is either wanting, or consisting of 4 or 6 pieces. In the *sterile flowers* the stamens are definite or indefinite, hypogynous, and very short; with 1- 2- or many-celled, egg-shaped *anthers*, which are turned outwards. In the *fertile flowers* the ovary is superior, 1-celled, very seldom 3 celled, and many-seeded; the *ovules* upright, or pendulous, or parietal; and the *stigmas* sessile, as many as the cells. The *fruit* is succulent or dry, not opening. The *seeds* are either solitary or several; the *embryo* is in the axis of a fleshy *albumen*, with a cleft on one side, in which the *plumula* lies; and the *radicle* is obtuse, and usually next the hilum, but occasionally it is at the opposite extremity. (See *Lind. Syn.*)—The British genera in this order are Arum, t. 261; and Acorus, t. 330.

Vaccinie'æ, *Dec.*—See folio 383.

These are dicotyledonous *shrubs*, with alternate coriaceous *leaves;* chiefly inhabiting mountainous situations or high northern latitudes. Their *calyx* is superior, with from 4 to 6 more or less distinct lobes. Their *corolla* is monopetalous, and lobed as often as the calyx. The *stamens* are distinct, double the number of the lobes of the corolla, and inserted into an epigynous disk. The *anthers* are 2-celled, opening by 2 pores, and often furnished with 2 horns. The *ovary* is inferior, 4- or 5-celled, and 1- or many-seeded. The *fruit* is a succulent *berry*, crowned with the permanent limb of the calyx; and the *seeds* are minute, with a fleshy *albumen.*—The British genera are, Vaccinium, t. 383.; and Oxycoccus, t. 429.

Elatineæ, *Cambessèdes.* Hook. Brit. Fl. (4th ed.) p. 400.—Lindl. Syn. (2nd ed.) Suppl. p. 321.

Small annual, dicotyledonous *plants*, with hollow, rooting *stems*, and opposite, stipulated leaves. The *calyx* consists of from 3 to 5 sepals, which are either distinct or slightly united. The *corolla* is from 3- to 5-petaled. The *stamens* are hypogynous, and as many, or twice as many, as the petals. The *ovary* has from 3 to 5 cells, and as many *styles*, and capitate *stigmas.* The *fruit* is a *capsule* of from 3 to 5 cells, and as many valves, alternate with the dissepiments, which usually adhere to a central axis. The *seeds* are numerous, with little *albumen*, a straight *embryo*, and a *radical* turned to the hilum.—The only British genus in this order is Ela'tine, t. 487.

Folio 487, line 3, after *Natural Order*, add Elatineæ, *Camb.*—Hook. Brit. Fl. (4th ed.) p. 400.—Lindl. Syn. (2nd ed.) Suppl. p. 321.

Folio 487, line 4, *for* 43, *read* 48; and in line 7 of the same folio, *erase* the reference to Hook. Brit. Fl. (4th ed.) p. 400.

The following Plants, belonging to genera of which I have not given a figure, have recently been found in situations *apparently* wild.

1. Aly'ssum.

Linn. Cl. and Ord. Tetradynamia, Siliculosa.—*Nat. Ord.* Cruciferæ.—Gen. Char. *Calyx* equal at the base. *Petals* emarginate. *Stamens* all or some of them toothed. *Silicle* roundish, with a convex disk and a retuse apex; *funicle* adhering to the base of the dissepiments. *Seeds* 2 in each cell, with membranous wings. *Cotyledons* flat, accumbent.

Aly'ssum Caly'cinum, *Willd.* Large-calyxed Madwort.—Spec. Char. Stems diffuse. Leaves strap-spear-shaped, canescent. Calyx permanent. Pods orbicular, somewhat emarginate, downy, 4 times as long as the style.—Linn. Sp. Pl. p. 908.—Willd. Sp. Pl. v. iii. pt. i. p. 464.—Jacq. Fl. Austr. t. 338.—An annual plant, a native in dry fields both in South and Middle Europe.—Flowering from June to August.

I have a specimen of this plant, gathered by the Rev. Andrew Bloxam, in 1836, between Broad and Chamber Hills, Charnwood Forest, Leicestershire.—In the Botany of Charnwood Forest, published in "The History and Antiquities of Charnwood Forest," a very beautiful and extremely interesting work, by T. R. Potter, (1842,) it is said to be "since extinct" there.—We are informed, in the 5th edit. of Sir W. J. Hooker's British Flora, that it has been found since in several parts of England and Scotland.—Near Hitchin Common, Herts, 1839: Mr. I. Brown, *Mag. Nat. Hist.*, new series, v. iv. p. 104.

2. Coroni'lla.

Linn. Cl. and Ord. Diade'lphia, Deca'ndria.—*Nat. Ord.* Leguminosæ.—Gen. Char. *Calyx* bell-shaped, short, 5-toothed, the two upper teeth approximate, and joined together higher up than the rest. *Corolla* papillionaceous; claws of the petals usually longer than the calyx. *Keel* acute. *Stamens* diadelphous. *Legume* nearly cylindrical, slender, at length separating into oblong, 1-seeded joints. *Seeds* egg-shaped or cylindrical.

Coroni'lla Va'ria Various-flowered Coronilla.

Spec. Char. Plant herbaceoas, diffuse, flexuose, smooth. Stipulas distinct, spear-shaped. Leaves pinnated; leaflets from 9 to 13, oblong, elliptic, mucronate; the lower ones approximating the stem. Umbels 16- to 20-flowered. Legumes angular, very long, straight.—Linn. Sp. Pl. p. 1048.—Willd. Sp. Pl. v. iii. pt. ii. p. 1153.—Curt. Bot. Mag. t. 258.—A perennial plant, native of Europe and Tauria, in fields and meadows.—Flowering from June to November.—This plant has been found, apparently wild, in Devon, at Bury-head, by Dr. Bromfield; and at Linton, by the Rev. Mr. Levett. See *Mag. Nat. Hist.* v. ix. p. 603; and *Hook. Brit. Fl.* 5th ed. p. 84.

3. Echinospe'rmum.

Linn. Cl. and Ord. Penta'ndria, Monogy'nia.—*Nat. Ord.* Borageneæ.—Gen. Char. *Calyx* inferior, 5-parted. *Corolla* monopetalous, salver-shaped, or funnel-shaped; throat furnished with short scales; limb 5-parted, obtuse, spreading. *Nuts* 4, distinct, 1-celled, triangular, compressed, echinated, fixed to the central column, not perforated at the base.

Echinospe'rmum La'ppula. Burdock Echinospermum.—Spec. Char. Stem branched at top. Leaves spear-shaped, beset with incumbent bristle-like hairs, swelled at their base, ciliated. Calyx at length spreading, exceeding the pedicels. Corolla small, exceeding the calyx, with an erectly spreading limb. Nuts furnished with a double row of hooked prickles along the margins, having the disk and sides tubercled.—Lehm. Asper. p. 121.—*Myosotis Lappula,* Linn. Sp. Pl. p. 189.

I received a specimen of this plant from the Rev. Mr. Holmes, of Harleston, Norfolk, gathered by him near Southwold, Suffolk, in August, 1839.—See *Corrections & Additions* at the end of volume V.

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TETRANDRIA. *4 stamens.*
Dipsacus sylvestris 490
Isnardia palustris 442
Ruppia maritima 451
Mœnchia erecta 360

PENTANDRIA. *5 stamens.*
Asperugo procumbens 466
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Cyclamen hederæfolium 505
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Hesperis matronalis 425
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Astragalus hypoglottis 453
Oxytropis campestris 495
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Borkhausia fœtida 467
Cichorium Intybus 417
Saussurea alpina 473
Cnicus lanceolatus 410
Carlina vulgaris 405
Bidens tripartita 446
Diotis maritima 499
Limbarda tricuspis 494

GYNANDRIA. *Stamens situated upon the style or column, above the germen.*
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Eriocaulon Septangulare 465
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N. B. When *a* follows the number of the folio, it indicates a reference to the second page of that leaf.

CORRECTIONS AND ADDITIONS.

Folio 404, line 9 from bottom, *for* Lightf. *read* Leight.

Folio 404 *a*, line 5, *for* Legustium, *read* Ligusticum.

Folio 440, lines 10 and 11, *for* Schrel, *read* Schreb.; and in line 11, for *limos*, read *limosa.*

Folio 444 *a*, line 20, *for* Groombridge, and other places about Hastings, *read* Groombridge; and about Hastings.

Folio 448, line 8 from bottom, *for* Shropsh. *read* Yorksh.

Folio 449, line 8 from the bottom, for *Dabeocii*, read *Daboecii*.

Folio 452, line 27, *for* Ror, *read* Rar.

Folio 454 *a*, line 3 from the bottom, for *ascetosa*, read *acetosa*.

Folio 460 *a*, line 2, *for* Lindl., *read* Linn.

Folio 473, line 31, *for* Sow-wort, *read* Saw-wort.

Folio 482 *a*, line 22, for *candatus*, read *caudatus*.

Folio 497 *a*, line 15 from the bottom, in some copies, *for* then, *read* thou.

LIST OF BOOKS REFERRED TO,

THE TITLES OF WHICH ARE ABRIDGED IN THE TEXT.

A.

Abb. Fl. Bedf.—Flora Bedfordiensis; comprehending such plants as grow wild in the county of Bedford. By Charles Abbot, M. A. F. L. S. Bedford. 1798. 1 vol. 8vo.

Ait. Hort. Kew.—Hortus Kewensis; or, a Catalogue of the Plants cultivated in the Royal Botanic Garden at Kew. By William Aiton, Gardener to His Majesty. 3 vols. 8vo. London. 1789.—A second edition by William Townsend Aiton, 5 vols. 8vo. London. 1810—1813.

Alpin. Exot.—Alpinus (Prosper) De Plantis Exoticis, libri duo. 1 vol. 4to. Venice, 1656.

Amœn. Acad.—Caroli Linnæi Amœnitates Academicæ, sue dissertationes variæ Physicæ, Medicæ, Botanicæ, etc. 10 vol. 8vo. Lugduni Batavorum; Holmiæ; & Erlangæ; 1749—1787.

Ann. du Mus.—Annales du Museum d'Histoire Naturelle. 20 vols. 4to. 1802—1813

Annals of Botany.—Annals of Botany. by Charles Konig, F. L. S., and John Sims, M. D. F. L. S. 2 vols. 8vo. London. 1805—1806.

B.

Bab. Fl. Bath.—Flora Bathoniensis; or, A Catalogue of the Plants indigenous to the vicinity of Bath. By Charles C. Babington, M. A. F. L. S. &c. 12mo. Bath. 1834.

Bab. Fl. Bath. Suppl.—Supplement to the Flora Bathoniensis. By Charles C. Babington, M. A. F. L. S. F. G. S. &c. Bath 1839.

Bab. Prim. Fl. Sarn.—Primitiæ Floræ Sarnicæ; or, an Outline of the Flora of the Channel Islands of Jersey, Guernsey, Alderney, and Serk, &c By Charles C. Babington, M. A. F. L. S. F. G. S., &c. 1 vol. 12mo. London. 1839.

Baines' Fl. Yorksh.—The Flora of Yorkshire. By Henry Baines, 1 vol. 8vo. London. 1840.

Bauh. Hist—Historia Plantarum Universalis. John Bauhin. 3 vols. fol. Ebrodum. 1650—1651.

Bauh. Pin.—Pinax Theatri Botanici, sive Index in Theophrasti, Dioscoridis, Plinii, &c. By Caspar Bauhin. 1 vol. 4to. Basil. 1671.

Bauh. Prod.—Prodromus Theatri Botanici. By Casper Bauhin. 1 vol. 4to. Frankfort, 1620. 2nd ed. Basil, 1671.

Baxt. Lib. of Agricul. and Hort. Knowl.—The Library of Agricultural and Horticultural Knowledge, &c. Printed and published by J. Baxter, Lewes, Sussex. 1 vol. 8vo. 2nd. ed. 1832.

Baxt. Stir. Crypt. Oxon.—Stirpes Cryptogamæ Oxonienses; or, Dried Specimens of Cryptogamous Plants, collected in the vicinity of Oxford. By William Baxter, A. L. S. and F. H. S. Botanical Gardener to the University. 4to. Oxford. Fasc. 1. 1825. Fasc. 2. 1828.

Beauv. Agrost.—Essai d'une Nouvelle Agrostographie. By Palisot de Beauvois, A. M. F. G. 1 vol. 8vo. et 4to. Paris, 1812.

Beesl. Hist. of Banb.—The Botany of the neighbourhood of Banbury, with a sketch of the Geology, compiled by Mr. Thomas Beesley.—Forms a portion of the History of Banbury, by Alfred Beesley. 1 vol. 8vo. Banbury. 1841.

Benth. Lab.—Labiatarum Genera et Species, by George Bentham. 1 vol. 8vo. London. 1832—1834.

Besl. Hort. Eyst.—Hortus Eystettensis; sive Plantarum, &c. By Basil Besler. 2 vol. fol. Nuremberg. 1612

Besser. Enum. Pl. Volh.—Enumeratio Plantarum in Volhyniæ, Podoliæ, etc. By W. J. J. Besser. 1 vol. 8vo. Vilnæ. 1822.

Bigel. Fl. Bost.—Florula Bostoniensis. By J. Bigelow. 1 vol. 8vo. Boston. 1814.

Bivona Bernardi, Cent.—Sicularum Plantarum, Centuria prima. By A. Bivona Bernardi. 1 vol. 8vo. Palermo. 1808.

Black. Sp. Bot.—Specimen Botanicum quo Plantarum plurium rariorum Angliæ indigenarum loci natales illustrantur. Authore J. Blackstone, Pharm. Lond. 1 vol. 12mo. Londini. 1746

Bocc. Mus.—Museo di Plante rare della Siciliæ, Maltæ, Corsicæ, Italiæ, Piedmontæ, è Germaniæ. Auctore Paulo Boccone. 1 vol. 4to. Venetia. 1679.

Bocc. Sic.—Icones et Descriptiones rariorum Plantarum Siciliæ, Melitæ, Galliæ, et Italiæ, etc. Auct. Paulo Boccone. 1 vol. 4to. Oxon. 1674.

Bot. Gall.—Botanicum Gallicum, seu synopsis Plantarum in flore Gallica descriptarum, à J. J. Duby digesta. 2 vols. 8vo. Paris. 1828—1830.

B. G. or *Bot. Guide.*—The Botanist's Guide through England and Wales. By Dawson Turner, F. R. S. and L. S. 2 vols. 12mo. London. 1805.

Bot Reg. N.S.—The Botanical Register; consisting of coloured figures of Exotic Plants, cultivated in British Gardens; with their history and mode of treatment. New Series. By Dr. Lindley. Continued Monthly.

Brot. Fl. Lus.—Flora Lusitanica. By F. A. Broter. 2 vols. 8vo. Lisbon. 1804.

Brown. Prod.—Prodromus floræ Novæ-Hollandiæ et insulæ Van-Diemen. By R. Browne, F. L. S. etc. London. 1810.

Bryant's Fl. Diætet.—Flora Diætetica; or, History of Esculent Plants, both Domestic and Foreign. By Charles Bryant. 1 vol. 8vo. London. 1783.

C.

Cavan. Ic.—Icones et Descriptiones Plantarum quæ aut sponte in Hispania crescunt, aut in hortis hospitantur. By A. J. Cavanilles. 6 vol. fol. Madrid. 1791—1801.

Clus. Hist.—Rariorum Plantarum Historia. By C. Clusius. 1 vol. fol. Antwerp. 1601.

Columm. Ecphr.—Minus cognitarum stirpium, etc. Ecphrasis. By F. Columna. 1 vol. 4to. Rome. 1616.

Columna's Stirp. Ecphr.—See ibid.

Cow. Fl. Faver.—A Floral Guide for East Kent, &c.; being a Record of the habitats of indigenous Plants found in the eastern division of the county of Kent, with those of Faversham, &c. By M. H. Cowell. 1 vol. 8vo. Faversham. 1839.

Cow. Fl. Guide.—See *Cow. Fl. Faver.*

Crantz. Austr.—Stirpium Austriacarum. By H. J. Crantz. 4 vol. 8vo. et 4to. 1762—1769.

Crantz. Fl. Austr.—See ibid.

Crantz. Stir. Austr.—See ibid.

Curt. Bot. Mag.—The Botanical Magazine; or, Flower-Garden Displayed. By William Curtis. London. 1787. Continued, vol. 1 to 12, by W. Curtis; 13 to 53, by J. Sims; the rest by Sir W. J. Hooker.

Curt. Brit. Entomol.—British Entomology; being Illustrations and Descriptions of the genera of Insects found in Great Britain and Ireland; containing coloured figures from nature of the most rare and beautiful species, and in many instances of the plants upon which they are found. By John Curtis, F. L. S. &c. &c. 16 vols. 8vo. London. 1823--1840.—The plants in this work are, like the insects, most beautifully executed, and it was my intention to have referred constantly to the work, when the plant was figured, but not having a copy of my own, I could not always get access to it.

Curt. Fl. Lond.—Flora Londinensis; or, Plates and Descriptions of such Plants as grow wild in the environs of London, &c. By William Curtis. London. 1777—1798.

Curt. Observ. on Brit. Grasses.—Practical Observations on the British Grasses, especially such as are best adapted to the laying down or improving of meadows and pastures, &c. By W. Curtis. 5th edit. by J Lawrence. 1 vol. 8vo. London. 1812.

Curt. on Grasses.—See ibid.

D.

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INDEX OF THE GENERA ARRANGED ACCORDING TO THE LINNEAN SYSTEM.

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Parietaria officinalis	3.	224
Alchemilla vulgaris	4.	280
Isnardia palustris	6.	442
Sanguisorba officinalis	4.	269

Ord. II.—Digynia. 2 *styles.*

Buffonia annua	2.	152

Ord. III.—Tetragynia. 4 *styles.*

Ilex aquifolium	4.	262
Potamogeton natans	5.	350
Ruppia maritima	6.	451
Sagina procumbens	3.	199
Mœnchia erecta	6.	460
Tillæa muscosa	5.	380
Radiola millegrana	3.	188

Class V.—Pentandria. 5 *sta.* (p. 48)

Ord. I.—Monogynia. 1 *style.*

Echium vulgare	3.	189
Pulmonaria officinalis	2.	102
Lithospermum purpuro-cæruleum.	4.	301
Symphytum officinale	2.	101

	vol.	plate
Borago officinalis	1.	66
Lycopus arvensis	1.	21
Anchusa sempervirens	1.	48
Myosotis palustris	1.	57
Asperugo procumbens	6.	466
Cynoglossum officinale	6.	477
Anagallis arvensis	1.	29
Lysimachia memorum	4.	310
Cyclamen hederæfolium	6.	505
Primula veris	2.	89
Hottonia palustris	6.	421
Menyanthes trifoliata	4.	245
Villarsia nymphæoides	3.	161
Erythræa Centaurium	5.	376
Datura stramonium	2.	121
Hyoscyamus niger	5.	321
Atropa belladonna	1.	10
Solanum Dulcamara	2.	110
Verbascum nigrum	2.	85
Convolvulus arvensis	1.	58
Polemonium cœruleum	2.	149
Azalea procumbens	6.	463
Vinca major	2.	158
Samolus Valerandi	1.	11
Jasione montana	5.	373
Lobelia urens	1.	79
Phyteuma orbiculare	3.	205
Campanula rotundifolia	1.	61
Lonicera Periclymenum	4.	287
Rhamnus Frangula	3.	219
Euonymus Europæus	2.	123
Claytonia alsinoides	4.	253
Impatiens Noli-me-tangere	2.	125
Viola canina	1.	4
Ribes rubrum	5.	345
Hedera Helix	1.	32
Glaux maritima	4.	246
Illecebrum verticillatum	6.	471
Thesium linophyllum	4.	263

Ord. II.—Digynia. 2 *styles.*

	vol.	plate
Swertia perennis	6.	498
Gentiana Pneumonanthe	3.	185
Cuscuta Europæa	1.	18
Hydrocotyle vulgaris	3.	168
Sanicula Europæa	3.	235
Eryngium maritimum	3.	162
Conium maculatum	4.	303
Physospermum cornubiense	6.	475
Smyrnium Olusatrum	3.	195
Cicuta virosa	5.	395
Apium graveolens	2.	156
Petroselinum segetum	5.	360
Trinia glaberrima	6.	468
Helosciadium nodiflorum	6.	415
Sison Amomum	6.	407
Ægopodium Podagraria	2.	151
Carum Carvi	3.	232
Bunium flexuosum	6.	435
Pimpinella saxifraga	6.	411
Sium latifolium	4.	319
Bupleurum rotundifolium	1.	13
Œnanthe crocata	2.	160
Æthusa Cynapium	1.	19
Fœniculum vulgare	3.	176
Seseli Libanotis	6.	455
Ligusticum Scoticum	6.	472
Silaus pratensis	6.	404
Meum athamanticum	4.	314
Crithmum maritimum	4.	261
Angelica sylvestris	6.	491
Peucedanum officinale	6.	419
Imperatoria ostruthium	5.	370
Pastinaca sativa	3.	172
Heracleum Sphondylium	2.	130
Tordylium maximum	6.	443
Daucus carota	3.	180
Caucalis daucoides	6.	459
Torilis Anthriscus	5.	347
Echinophora spinosa	6.	478
Scandix Pecten-Veneris	4.	272
Anthriscus sylvestris	3.	228
Chærophyllum temulentum	6.	483
Myrrhis odorata	5.	374
Coriandrum sativum	6.	504
Chenopodium hybridum	5.	352
Beta maritima	3.	231
Salsola Kali	4.	255
Herniaria hirsuta	4.	304
Ulmus montana	5.	386

Ord. III.—Trigynia. 3 *styles.*

	vol.	plate
Viburnum Lantana	2.	128
Sambucus ebulus	2.	122
Staphyllea pinnata	3.	198
Tamarix gallica	6.	481
Corrigiola littoralis	4.	312

Ord. IV.—Tetragynia. 4 *styles.*

	vol.	plate
Parnassia palustris	1.	70

Ord. V.—Pentagynia. 5 *styles.*

	vol.	plate
Statice Limonium	3.	183
Linum usitatissimum	5.	353
Sibbaldia procumbens	6.	470

Ord. VI.—Hexagynia. 6 *styles.*

	vol.	plate
Drosera rotundifolia	3.	201

Ord. VII.—Polygynia. *Many styles.*

	vol.	plate
Myosurus minimus	3.	204

Class VI.—Hexandria. 6 *sta.* (p.33)

Ord. I.—Monogynia. 1 *style.*

	vol.	plate
Berberis vulgaris	2.	115
Frankenia lævis	2.	132
Peplis portula	3.	220
Leucojum æstivum	1.	55
Galanthus nivalis	1.	33
Narcissus Pseudo-narcissus	1.	73
Convallaria majalis	1.	78
Allium ursinum	2.	97
Gagea lutea	1.	41
Ornithogalum umbellatum	2.	124
Scilla bifolia	2.	95
Hyacinthus non scriptus	1.	74
Muscari racemosum	2.	92
Anthericum serotinum	6.	464
Asparagus officinalis	6.	403
Narthecium ossifragum	3.	186
Fritillaria Meleagris	1.	1
Lilium Martagon	6.	501
Tulipa sylvestris	1.	2
Acorus calamus	5.	330
Juncus lampocarpus	5.	399
Luzula campestris	5.	379

Ord. II.—Digynia. 2 *styles.*

	vol.	plate
Oxyria reniformis	4.	311

Ord. III.—Trigynia. 3 *styles.*

Rumex obtusifolius	6.	454
Tofieldia palustris	3.	227
Scheuchzeria palustris	6.	503
Triglochin palustre	1.	60
Colchicum autumnale	1.	17

Ord. IV.—Hexagynia. 6 *styles.*

Actinocarpus Damasonium	6.	437

Ord. V.—Polygynia. *Many styles.*

Alisma Plantago	5.	337

Class VII.—Heptandria. 7 *stamens.* (p. 343.)

Ord. I.—Monogynia. 1 *style.*

Trientalis Europæa	5.	343

Class VIII.—Octandria. 8 *sta.* (42.)

Order I.—Monogynia. 1 *style.*

Acer campestre	2.	98
Chlora perfoliata	1.	69
Menziesia polifolia	6.	449
Erica Tetralix	6.	418
Calluna vulgaris	1.	76
Vaccinium Vitis-Idæa	5.	383
Oxycoccus palustris	6.	429
Œnothera biennis	4.	257
Epilobium angustifolium	1.	14
Daphne Mezereum	2.	96

Ord. II.—Trigynia. 3 *styles.*

Polygonum Bistorta	1.	5

Ord. III.—Tetragynia. 4 *styles.*

Paris quadrifolia	1.	6
Adoxa moschatellina	1.	42
Elatine hexandra	6.	487

Class IX.—Enneandria. 9 *sta.* (p.34)

Ord. I.—Hexagynia. 6 *styles.*

Butomus umbellatus	1.	34

Class X.—Decandria. 10 *sta.* (p.37.)

Ord. I.—Monogynia. 1 *style.*

Monotropa Hypopitys	4.	275
Pyrola minor	3.	239
Ledum palustre	6.	508
Andromeda polifolia	5.	361
Arbutus Unedo	6.	497
Arctostaphylos Uva-Ursi	6.	502

Ord. II.—Digynia. 2 *styles.*

Scleranthus annuus	6.	439
Chrysosplenium oppositifolium	2.	140
Saxifraga aizoides	3.	187
Saponaria officinalis	1.	37
Dianthus Caryophyllus	2.	81

Ord. III.—Trigynia. 3 *styles.*

Silene armeria	2.	120
Cucubalus baccifer	6.	507
Stellaria nemorum	2.	154
Arenaria verna	5.	384
Cherleria sedoides	4.	316

Ord. IV.—Pentagynia. 5 *styles.*

	vol.	plate
Cotyledon Umbilicus	4.	279
Sedum acre	5.	364
Oxalis Acetosella	5.	327
Agrostemma Githago	3.	175
Lychnis Flos-Cuculi	1.	71
Cerastium arvense	4.	286
Spergula arvensis	5.	388

Class XI.—Dodecandria. 12 to 19 *stamens* (p. 88.)

Ord. I.—Monogynia. 1 *style.*

Asarum Europæum	4.	250
Lythrum Salicaria	3.	229

Ord. II.—Digynia. 2 *styles.*

Agrimonia Eupatoria	2.	88

Ord. III.—Trigynia. 3 *styles.*

Reseda lutea	1.	15

Ord. IV.—Dodecagynia, 12 *styles.*

Sempervivum tectorum	6.	401

Class XII.—Icosandria. 20 *or more stamens placed on the calyx* (p. 100)

Ord. I.—Monogynia. 1 *style.*

Prunus cerasus	2.	100

Ord. II.—Pentagynia. 5 *styles, (variable in most of the genera.)*

Mespilus Germanica	6.	493
Cratægus Oxyacantha	2.	118
Cotoneaster vulgaris	6.	402
Pyrus torminalis	2.	111
Spiræa Filipendula	2.	133

Ord. III.—Polygynia. *Many styles.*

Rosa arvensis	5.	325
Rubus fruticosus	5.	334
Fragaria vesca	4.	242
Comarum palustre	3.	197
Potentilla rupestris	4.	313
Tormentilla officinalis	5.	341
Geum rivale	1.	3
Dryas octopetala	4.	248

Class XIII. — Polyandria. *Many stamens, inserted upon the receptacle,* (pp. 7, 43, 51.)

Ord. I.—Monogynia. 1 *style.*

Papaver somniferum	1.	53
Meconopsis Cambrica	1.	54
Glaucium luteum	2.	131
Chelidonium majus	1.	51
Actæa spicata	3.	218
Helianthemum vulgare	5.	393
Tilia Europæa	4.	293
Nymphæa alba	3.	181 & 182
Nuphar lutea	4.	281 & 282

Ord. II.—Pentagynia. 2 *to* 6 *styles.*

Heleborus fœtidus	2.	103
Pæonia corallina	3.	217
Delphinium Consolida	4.	297
Aconitum Napellus	2.	87
Aquilegia vulgaris	3.	221
Stratiotes aloides	6.	413

Ord. III.—Polygynia. *Many styles.*

	vol.	plate
Thalictrum flavum	4.	254
Clematis vitalba	2.	129
Anemone nemorosa	1.	43
Adonis autumnalis	1.	7
Ranunculus acris	4.	302
Trollius Europæus	4.	241
Caltha palustris	2.	153

Class XIV.—Didynamia. 4 *stamens; 2 longer than the other* 2, (p. 31.)

Ord. I.—Gymnospermia. (p. 31.)

Mentha hirsuta	5.	398
Thymus Serpyllum	2.	127
Origanum vulgare	5.	354
Teucrium Scorodonia	1.	22
Ajuga reptans	2.	94
Ballota nigra	2.	86
Leonurus Cardiaca	2.	126
Galeobdolon luteum	3.	194
Galeopsis versicolor	1.	75
Lamium album	1.	31
Betonica officinalis	3.	214
Stachys palustris	1.	16
Nepeta cataria	5.	378
Verbena officinalis	1.	26
Glechoma hederacea	2.	136
Marrubium vulgare	3.	171
Acinos vulgaris	6.	479
Calamintha Nepeta	6.	486
Clinopodium vulgare	5.	346
Melittis Melissophyllum	4.	285
Prunella vulgaris	1.	67
Scutellaria galericulata	1.	12

Ord. II.—Angiospermia. (p. 72)

Bartsia Odontites	3.	223
Euphrasia officinalis	1.	72
Rhinanthus Crista-Galli	4.	259
Melampyrum arvense	6.	457
Lathræa squamaria	5.	365
Pedicularis sylvatica	4.	266
Antirrhinum majus	3.	169
Linaria Cymbalaria	1.	23
Scrophularia nodosa	5.	385
Digitalis purpurea	2.	113
Limosella aquatica	3.	212
Sibthorpia Europæa	3.	215
Linnæa borealis	5.	340
Orobanche minor	5.	381

Class XV.—Tetradynamia. 6 *stamens*, 4 *long and* 2 *short*, (p. 38.)

Ord. I.—Siliculosa, (p. 107)

	vol.	plate
Cakile maritima	4.	258
Crambe maritima	2.	107
Coronopus Ruellii	4.	320
Isatis tinctoria	3.	210
Vella annua	6.	420
Thlaspi perfoliata	3.	240
Capsella Bursa-Pastoris	3.	191
Hutchinsia petræa	2.	138
Teesdalia nudicaulis	6.	423
Iberis amara	5.	351
Lepidium latifolium	3.	236
Cochlearia officinalis	5.	375
Subularia aquatica	6.	428
Draba verna	1.	38
Camelina sativa	6.	447
Koniga maritima	5.	355

Ord. II.—Siliquosa, (p. 62)

Dentaria bulbifera	2.	145
Cardamine pratensis	2.	141
Arabis Turrita	2.	159
Turritis glabra	6.	430
Barbarea vulgaris	6.	450
Nasturtium officinale	4.	271
Sisymbrium Irio	2.	146
Erysimum cheiranthoides	1.	62
Cheiranthus Cheiri	3.	237
Matthiola incana	6.	445
Hesperis matronalis	6.	425
Brassica Rapa	6.	458
Sinapis nigra	5.	336
Raphanus Raphanistrum	5.	359

Class XVI.—Monadelphia. *Filaments combined in one set*, (p. 106)

Ord. I.—Pentandria. 5 *stamens.*

Erodium moschatum	5.	362

Ord. II.—Decandria. 10 *stamens.*

Geranium pratense	1.	30

Ord. III.—Polyandria. *Many stam.*

Lavatera arborea	2.	106
Malva moschata	1.	25
Althæa officinalis	3.	226

Class XVII.—Diadelphia. *Filaments combined in two sets*, (p. 77.)

Ord. I.—Hexandria. 6 *stamens.*

Corydalis solida	3.	190
Fumaria officinalis	4.	278

Ord. II.—Octandria. 8 *stamens.*

Polygala vulgaris	4.	251

Ord. III.—Decandria. 10 *stamens.*

Ulex Europæus	2.	93
Genista tinctoria	2.	84
Spartium scoparium	1.	77
Ononis antiquorum	4.	289
Anthyllis vulneraria	5.	397
Orobus tuberosus	6.	433
Lathyrus latifolius	2.	117
Pisum maritimum	3.	225
Vicia sylvatica	3.	173
Ervum hirsutum	5.	322
Astragalus hypoglottis	6.	453
Oxytropis campestris	6.	495
Ornithopus perpusillus	5.	358
Arthrolobium ebracteatum	6.	509
Hippocrepis comosa	5.	369
Onobrychis sativa	2.	134
Melilotus officinalis	5.	363
Trifolium pratense	4.	283
Lotus corniculatus	4.	249
Medicago sativa	5.	329

Class XVIII.—Polyadelphia. *Filaments combined in more than two sets*, (p. 39)

Ord. I.—Polyandria. *Many stamens.*

Hypericum perforatum	1.	80
Androsæmum officinale	1.	39

Class XIX.—Syngenesia. *Anthers united into a tube. Flowers compound,* (p. 91)

Ord. I.—Æqualis, (p. 147)

	vol.	plate
Tragopogon pratensis	5.	390
Helminthia echioides	4.	270
Picris hieracioides	4.	274
Apargia hispida	4.	318
Thrincia hirta	5.	323
Hypochæris radicata	6.	406
Lactuca virosa	4.	315
Prenanthes muralis	1.	27
Crepis virens	5.	366
Sonchus oleraceus	2.	147
Leontodon Taraxacum	3.	163
Borkhausia fœtida	6.	467
Hieracium umbellatum	3.	165
Lapsana communis	2.	150
Cichorium Intybus	6.	417
Arctium Lappa	5.	333
Serratula tinctoria	3.	174
Saussurea alpina	6.	473
Carduus nutans	3.	177
Cnicus lanceolatus	6.	410
Onopordum acanthium	4.	273
Carlina vulgaris	6.	405
Bidens tripartita	6.	446
Eupatorium cannabinum	3.	178
Chrysocoma Linosyris	3.	233
Diotis maritima	6.	499

Ord. II.—Superflua. (p. 36)

Tanacetum vulgare	1.	24
Artemisia Absinthium	5.	339
Gnaphalium dioicum	4.	243
Petasites vulgaris	2.	139
Tussilago Farfara	2.	91
Erigeron acris	3.	166
Aster Tripolium	3.	230
Senecio squalidus	1.	52
Cineraria campestris	3.	206
Solidago Virgaurea	3.	238
Conyza squarrosa	4.	290
Inula Helenium	4.	265
Limbarda tricuspis	6.	494
Pulicaria dysenterica	3.	170
Doronicum Pardalianches	2.	157
Bellis perennis	1.	44
Chrysanthemum segetum	4.	306
Pyrethrum Parthenium	1.	20
Matricaria Chamomilla	5.	335
Anthemis cotula	5.	328
Achillea Ptarmica	1.	36

Ord. III.—Frustranea, (p. 35)

Centaurea Cyanus	1.	35

Class XX.—Gynandria. *Stamens situated upon the style or column, above the germen,* (p. 8)

Ord. I.—Monandria. 1 *stamen.*

	vol.	plate
Orchis tephrosanthos	3.	213
Gymnadenia conopsea	6.	409
Peristylus albidus	5.	387
Aceras anthropophora	4.	305
Herminium monorchis	4.	295
Ophrys apifera	1.	8
Goodyera repens	4.	309
Spiranthes autumnalis	1.	63
Listera Nidus-Avis	5.	357
Epipactis palustris	4.	317
Malaxis paludosa	5.	394
Liparis Læselii	6.	414
Corallorrhiza innata	6.	422

Ord. II.—Diandria. 2 *stamens.*

Cypripedium Calceolus	2.	105

Ord. III.—Hexandria. 6 *stamens.*

Aristolochia clematitis	1.	28

Class XXI.—Monœcia; *Stamens and Pistils in separate flowers, but both on the same plant,* (p. 83)

Ord. I.—Monandria. 1 *stamen.*

Euphorbia helioscopia	5.	368
Callitriche verna	5.	392
Zannichellia palustris	3.	164
Zostera marina	6.	456

Ord. II.—Diandria. 2 *stamens.*

Lemna minor	6.	424

Ord. III.—Triandria. 3 *stamens.*

Typha angustifolia	5.	377
Sparganium simplex	4.	276
Carex recurva	6.	440
Elyna caricina	6.	484

Ord. IV.—Tetrandria. 4 *stamens.*

Littorella lacustris	4.	284
Alnus glutinosa	3.	193
Buxus sempervirens	2.	142
Urtica dioica	4.	298

Ord. V.—Pentandria. 5 *stamens.*

Xanthium Strumarium	6.	461
Amaranthus Blitum	6.	482
Bryonia dioica	2.	83

Ord. VI.—Hexandria. 6 *stamens.*

Eriocaulon septangulare	6.	465

Ord. VII.—Polyandria. *Many stamens.*

Ceratophyllum demersum	4.	260
Myriophyllum verticillatum	5.	376
Sagittaria sagittifolia	2.	109
Arum maculatum	4.	261
Poterium sanguisorba	6.	438
Quercus Robur	5.	371
Fagus sylvatica	5.	331
Castanea vesca	6.	485
Betula alba	5.	326
Carpinus Betulus	3.	234
Coryllus Avellana	5.	338

Ord. VIII.—Monadelphia. *Stamens united into one set.*

Pinus sylvestris	5.	389

Class XXII.—Diœcia. *Stamens and pistils in separate flowers, and on different plants,* (p. 143)

Ord. I.—Diandria. 1 *to* 5, *mostly* 2, *stamens.*

Salix purpurea	6.	434

Ord. II.—Triandria. 3 *stamens.*

	vol.	plate
Empetrum nigrum	6.	469
Ruscus aculeatus	6.	474

Ord. III.—Tetrandria. 4 *stamens.*

	vol.	plate
Viscum album	1.	40
Hippophæ rhamnoides	6.	426
Myrica Gale	6.	489

Ord. IV.—Pentandria. 5 *stamens.*

	vol.	plate
Humulus Lupulus	5.	342

Ord. V.—Hexandria. 6 *stamens.*

	vol.	plate
Tamus communis	4.	291

Ord. VI.—Octandria. 8 *stamens.*

	vol.	plate
Populus nigra	6.	506
Rhodiola rosea	5.	391

Ord. VII.—Enneandria. 9 *stammes.*

	vol.	plate
Mercurialis perennis	2.	143
Hydrocharis Morsus Ranæ	6.	441

Ord. VIII.—Monadelphia. *Stamens combined.*

	vol.	plate
Juniperus communis	6.	431
Taxus baccata	3.	222

Class XXIII.—Polygamia. *Stamens and Pistils separated in some species, united in others, either on the same, or on 2 or 3 different plants,* (p. 356)

Ord. I.—Monœcia. *Flowers different on the same plant.*

	vol.	plate
Atriplex patula	5.	356

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Class I.—Dicotyledones.

Order I.—Ranunculaceæ. (p. 129 *a*)

	vol.	plate
Clematis vitalba	2.	129
Thalictrum flavum	4.	254
Anemone nemorosa	1.	43
Adonis autumnalis	1.	7
Myosurus minimus	3.	204
Ranunculus acris	4.	302
Caltha palustris	2.	153
Trollius Europæus	4.	241
Helleborus fœtidus	2.	103
Aquilegia vulgaris	3.	221
Delphinium Consolida	4.	297
Aconitum Napellus	2.	87
Actæa spicata	3.	218
Pæonia corallina	3.	217

Ord. II.—Berberideæ. (p. 115 *a*)

	vol.	plate
Berberis vulgaris	2.	115
Epimedium alpinum	1.	47

Ord. III.—Nymphæaceæ. (p. 281--2 *a*)

	vol.	plate
Nymphæa alba	3.	181 & 182
Nuphar lutea	4.	281 & 282

Ord. IV.—Papaveraceæ (p. 54 *a*)

	vol.	plate
Papaver somniferum	1.	53
Meconopsis Cambrica	1.	54
Glaucium luteum	2.	131
Chelidonium majus	1.	51

Ord. V.—Fumariaceæ (p. 190 *a*)

	vol.	plate
Fumaria officinalis	4.	278
Corydalis solida	3.	190

Ord. VI.—Cruciferæ (p. 38 *a*)

	vol.	plate
Cakile maritima	4.	258
Crambe maritima	2.	107
Coronopus Ruellii	4.	320
Isatis tinctoria	3.	210
Vella annua	6.	420
Thlaspi perfoliatum	3.	240
Capsella Bursa-Pastoris	3.	191
Hutchinsia petræa	2.	138
Teesdalia nudicaulis	6.	423
Iberis amara	5.	351
Lepidium latifolium	3.	236
Cochlearia officinalis	5.	375
Subularia aquatica	6.	428
Draba verna	1.	38
Camelina sativa.	6.	447
Koniga maritima	5.	355
Dentaria bulbifera	2.	145
Cardamine pratensis	2.	141
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* Sir W. J. Hooker refers Parnassia to HYPERICINEÆ.

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* Had I adopted all Professor Lindley's genera I could not have completed this work in 6 volumes, or about 500 plates, as, at its commencement in 1832, I promised to do.

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ERRATA.

Folio 6, line 2, *for* MONOGYNIA, *read* TETRAGYNIA.

Folio 13 a, line 9 from the bottom, for *Lucojum*, read *Leucojum*.

Folio 32, line 3, after *Natural Order*, add ARALIACEÆ.

Folio 42, line 3, after *Natural Order*, add ARALIACEÆ.

Folio 56, line 2, *for* MONOGYNIA, *read* DIGYNIA.

Folio 59, line 2, *for* MONOGYNIA, *read* DIGYNIA.

Folio 72, line 3, *for* RHINANTHACEÆ, *read* SCROPHULARINEÆ.

Folio 97, line 15 from the bottom, for *Molly*, read *Moly*.

Folio 103, line 2, *for* POLYGYNIA, *read* PENTAGYNIA.

Folio 143, line 6, *for* 385 *read* 384.

Folio *181 and 182, line 1, *for* WATERLILLY, *read* WATERLILY; and *181 and 182 a, line 9, *for* tpye, *read* type.

Folio 203 a, in cancel, line 15 from the bottom, *for* It, *read* In.—At the bottom of the plate 203, for *Spartina stricta*, read *Spartina alterniflora;* and for *Twin-spiked*, read *Alternate-flowered*.

Folio 209 a, line 8 from the bottom, *for* hybernacula, *read* herbernaculæ.

Folio 239, line 5, *for* MONOTROFEÆ, *read* MONOTROPEÆ.

Folio 247, line 24, *for* M'ILIUM, *read* MI'LIUM.

Folio 263, line 2, *for* DIGYNIA, read MONOGYNIA.

Folio 271, bottom line, *for* 91, *read* 38; *for* 147, *read* 62; and *for* 27, read 38.

Folio 279, line 2, *for* MONOGYNIA, *read* PENTAGYNIA.

Folio 306, line 7, *for* CARDUA'CEÆ, *read* ANTHEMIDEÆ; and line 9, *for* sect. 2, *read* sect. 3.

Folio 385 a, line 2 from the bottom, *after* case *add* it.

Folio 387. *Platanthera* of LINDLEY'S *Synopsis*, 2nd ed. p. 261, has, by an oversight, been omitted. It differs from *Peristylus* in having a long slender spur, and contains only the Butterfly Orchis, *Habenaria bifolia* of HOOKER'S *British Flora*, in which work, and also in LINDLEY'S *Synopsis*, 1st edit., it is included in the same genus as *Peristylus albidus*, and *P. viridis*. It is the *Orchis bifolia* of Linn. Sp. Pl. p. 1331; of Engl. Bot. t. 22; of Curt. Fl. Lond. fasc. 6. t. 65; and of Smith's Engl. Fl. v. iv. p. 9.

Folio 425, line 2, *for* SILICULOSA, *read* SILIQUOSA.

Folio 454 a, line 3 from the bottom, for *ascetosa*, read *acetosa*.

Index, page xiv, line 2, *for* 261, *read* 267.

———, page xix, line 25, left-hand column, for 151, read 154.

———, page xx, line 1, *for* 261, *read* 267.

DIRECTIONS TO THE BINDER.

If the work is bound up in six volumes, in the order in which it was published, so that the plates shall follow each other consecutively, then—

Vol. 1. will contain plates	1 to 80	There are separate Indexes to each Volume.
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Vol 3.	161 to 240	
Vol. 4.	241 to 320	
Vol. 5.	321 to 400	
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If arranged according to either of the Systematic Indexes, it may be divided into five volumes, thus—

Linnæan Method. (See Index, p. xiii.)

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Vol. 2. Pentandria only.
Vol. 3. Hexandria to Polyandria.
Vol. 4. Didynamia to Polyadelphia.
Vol. 5. Syngenesia to Polygamia.

Natural Method. (See Index, p. xviii.)*

Vol. I. Ranunculaceæ to Leguminosæ.
Vol. 2. Amygdaleæ to Stellatæ.
Vol. 3. Valerianeæ to Solaneæ.
Vol. 4. Orobancheæ to Coniferæ.
Vol. 5. Alismaceæ to Cyperaceæ.

A Dedication to follow the Title-page of each volume.

The text (203) for Spartina Alterniflora, to be substituted for that of (203) Spartina stricta; and the lines to The Cherwell Waterlily (*181 & 182), given in Vol. 4, to follow the account of the *Nymphæa alba*, or *White Waterlily* (181 & 1802), in Vol. 3.

List of Books referred to, General Indexes, &c., at the end of the last Volume.

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* This arrangement, with only one or two exceptions, is the same as that adopted by Sir W. J. Hooker, in the fifth edition of his "British Flora," published in 1842.

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